

SEQUENCE LISTING

<110> Reed, John C.
Godzik, Adam
Chu, Zhi-Liang
Pawlowski, Krzysztof
Fiorentino, Loredana
Ariza, Maria Eugenia
Stehlik, Christian

<120> PAAD Domain-Containing Polypeptides,
Encoding Nucleic Acids, and Methods of Use

<130> P-LJ 4816

<150> US 09/671,760

<151> 2000-09-26

<160> 64

<170> FastSEQ for Windows Version 4.0

<210> 1

<211> 76

<212> PRT

<213> Homo sapien

<400> 1

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Ile	Thr	Thr	Phe	Ser	Leu	Ala	His	Glu	Leu	Gln	Lys	Ile	Pro	His	Lys
		20					25				30				
Glu	Val	Asp	Lys	Ala	Asp	Gly	Lys	Gln	Leu	Val	Glu	Ile	Leu	Thr	Thr
	35					40				45					
His	Cys	Asp	Ser	Tyr	Trp	Val	Glu	Met	Ala	Ser	Leu	Gln	Val	Phe	Glu
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Lys	Met	His	Arg	Met	Asp	Leu	Ser	Glu	Arg	Ala	Lys				
65				70				75							

<210> 2

<211> 76

<212> PRT

<213> Homo sapien

<400> 2

Tyr	Leu	Glu	Glu	Leu	Lys	Lys	Glu	Glu	Phe	Arg	Lys	Phe	Lys	Glu	His
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Leu	Lys	Gln	Met	Thr	Leu	Gln	Leu	Glu	Lys	Gln	Ile	Pro	Trp	Thr	
	20					25				30					
Glu	Val	Lys	Lys	Ala	Ser	Arg	Glu	Glu	Leu	Ala	Asn	Leu	Leu	Ile	Lys

	35					40				45					
His	Tyr	Glu	Glu	Gln	Gln	Ala	Trp	Asn	Ile	Thr	Leu	Arg	Ile	Phe	Gln
	50					55					60				
Lys	Met	Asp	Arg	Lys	Asp	Leu	Cys	Met	Lys	Val	Met				
65					70					75					

<210> 3
 <211> 73
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 <213> Homo sapien

Ala	Leu	Glu	Glu	Leu	Ser	Gln	Glu	Gln	Leu	Lys	Arg	Phe	Arg	His	Lys
1				5					10					15	
Leu	Arg	Asp	Val	Gly	Pro	Asp	Gly	Arg	Ser	Ile	Pro	Trp	Gly	Arg	Leu
			20					25					30		
Glu	Arg	Ala	Asp	Ala	Val	Asp	Leu	Ala	Glu	Gln	Leu	Ala	Gln	Phe	Tyr
		35					40					45			
Gly	Pro	Glu	Pro	Ala	Leu	Glu	Val	Ala	Arg	Lys	Thr	Leu	Lys	Arg	Ala
	50					55					60				
Asp	Ala	Arg	Asp	Val	Ala	Ala	Gln	Leu							
65					70										

<210> 4
 <211> 75
 <212> PRT
 <213> Homo sapien

Tyr	Met	Arg	Asn	Val	Ser	His	Glu	Glu	Leu	Gln	Arg	Phe	Lys	Gln	Leu
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Leu	Leu	Thr	Glu	Leu	Ser	Thr	Gly	Thr	Met	Pro	Ile	Thr	Trp	Asp	Gln
			20					25					30		
Val	Glu	Thr	Ala	Ser	Trp	Ala	Glu	Val	Val	His	Leu	Leu	Ile	Glu	Arg
		35					40					45			
Phe	Pro	Gly	Arg	Arg	Ala	Trp	Asp	Val	Thr	Ser	Asn	Ile	Phe	Ala	Ile
	50					55					60				
Met	Asn	Cys	Asp	Lys	Met	Cys	Val	Val	Val	Arg					
65					70					75					

<210> 5
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Ala	Leu	Ser	Asp	Leu	Glu	Glu	Asn	Asp	Phe	Lys	Lys	Leu	Lys	Phe	Tyr
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Leu	Arg	Asp	Met	Thr	Leu	Ser	Glu	Gly	Gln	Pro	Pro	Leu	Ala	Arg	Gly
			20					25					30		

Glu Leu Glu Gly Leu Ile Pro Val Asp Leu Ala Glu Leu Leu Ile Ser
35 40 45
Lys Tyr Gly Glu Lys Glu Ala Val Lys Val Val Leu Lys Gly Leu Lys
50 55 60
Val Met Asn Leu Leu Glu Leu Val Asp Gln Leu Ser
65 70 75

<210> 6
<211> 75
<212> PRT
<213> Homo sapien

<400> 6
Tyr Leu Glu Glu Leu Glu Ala Val Glu Leu Lys Lys Phe Lys Leu Tyr
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Leu Gly Thr Ala Thr Glu Leu Gly Glu Gly Lys Ile Pro Trp Gly Ser
20 25 30
Met Glu Lys Ala Gly Pro Leu Glu Met Ala Gln Leu Leu Ile Thr His
35 40 45
Phe Gly Pro Glu Glu Ala Trp Arg Leu Ala Leu Ser Thr Phe Glu Arg
50 55 60
Ile Asn Arg Lys Asp Leu Trp Glu Arg Gly Gln
65 70 75

<210> 7
<211> 76
<212> PRT
<213> Homo sapien

<400> 7
Thr Leu Glu Glu Leu Val Pro Tyr Asp Phe Glu Lys Phe Lys Phe Lys
1 5 10 15
Leu Gln Asn Thr Ser Val Gln Lys Glu His Ser Arg Ile Pro Arg Ser
20 25 30
Gln Ile Gln Arg Ala Arg Pro Val Lys Met Ala Thr Leu Leu Val Thr
35 40 45
Tyr Tyr Gly Glu Glu Tyr Ala Val Gln Leu Thr Leu Gln Val Leu Arg
50 55 60
Ala Ile Asn Gln Arg Leu Leu Ala Glu Glu Leu His
65 70 75

<210> 8
<211> 71
<212> PRT
<213> Homo sapien

<400> 8
Tyr Leu Glu Asp Leu Glu Asp Val Asp Leu Lys Lys Phe Lys Met His
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Leu Glu Asp Tyr Pro Pro Gln Lys Gly Cys Ile Pro Leu Pro Arg Gly

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<210> 9
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<212> PRT
<213> Homo sapien
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<400> 9
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Leu Leu Ser Val Pro Leu Arg Glu Gly Tyr Gly Arg Ile Pro Arg Gly
          20          25          30
Ala Leu Leu Pro Met Asp Ala Leu Asp Leu Thr Asp Lys Leu Val Ser
          35          40          45
Phe Tyr Leu Glu Thr Tyr Gly Ala Glu Leu Thr Ala Asn Val Leu Arg
 50          55          60
Asp Met Gly Leu Gln Glu Met Ala Gly Gln Leu Gln
65          70          75

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<210> 10
<211> 76
<212> PRT
<213> Homo sapien
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<400> 10
Val Leu Glu Asn Leu Thr Pro Glu Glu Leu Lys Lys Phe Lys Met Lys
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Leu Gly Thr Val Pro Leu Arg Glu Gly Phe Glu Arg Ile Pro Arg Gly
          20          25          30
Ala Leu Gly Gln Leu Asp Ile Val Asp Leu Thr Asp Lys Leu Val Ala
          35          40          45
Ser Tyr Tyr Glu Asp Tyr Ala Ala Glu Leu Val Val Ala Val Leu Arg
 50          55          60
Asp Met Arg Met Leu Glu Ala Ala Arg Leu Gln
65          70          75

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<210> 11
<211> 76
<212> PRT
<213> Homo sapien
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Tyr Leu Glu Phe Leu Lys Lys Glu Glu Leu Lys Glu Phe Gln Leu Leu
  1             5             10             15
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Leu	Ala	Asn	Lys	Ala	His	Ser	Arg	Ser	Ser	Ser	Gly	Glu	Thr	Pro	Ala
			20					25					30		
Gln	Pro	Glu	Lys	Thr	Ser	Gly	Met	Glu	Val	Ala	Ser	Tyr	Leu	Val	Ala
		35					40					45			
Gln	Tyr	Gly	Glu	Gln	Arg	Ala	Trp	Asp	Leu	Ala	Leu	His	Thr	Trp	Glu
	50					55					60				
Gln	Met	Gly	Leu	Arg	Ser	Leu	Cys	Ala	Gln	Ala	Gln				
65					70					75					

<210> 12
 <211> 70
 <212> PRT
 <213> Homo sapien

Gly	Leu	Asp	Asn	Ile	Thr	Asp	Glu	Glu	Leu	Asp	Arg	Phe	Lys	Phe	Phe
1				5					10					15	
Leu	Ser	Asp	Glu	Phe	Asn	Ile	Ala	Thr	Gly	Lys	Leu	His	Thr	Ala	Asn
			20					25					30		
Arg	Ile	Gln	Val	Ala	Thr	Leu	Met	Ile	Gln	Asn	Ala	Gly	Ala	Val	Ser
		35					40					45			
Ala	Val	Met	Lys	Thr	Ile	Arg	Ile	Phe	Gln	Lys	Leu	Asn	Tyr	Met	Leu
	50					55					60				
Leu	Ala	Lys	Arg	Leu	Gln										
65					70										

<210> 13
 <211> 71
 <212> PRT
 <213> Homo sapien

Gly	Leu	Glu	Val	Ile	Asn	Asp	Tyr	His	Phe	Arg	Met	Val	Lys	Ser	Leu
1				5					10					15	
Leu	Ser	Asn	Asp	Leu	Lys	Leu	Asn	Leu	Lys	Met	Arg	Glu	Glu	Tyr	Asp
			20					25					30		
Lys	Ile	Gln	Ile	Ala	Asp	Leu	Met	Glu	Glu	Lys	Phe	Arg	Gly	Asp	Ala
		35					40					45			
Gly	Leu	Gly	Lys	Leu	Ile	Lys	Ile	Phe	Glu	Asp	Ile	Pro	Thr	Leu	Glu
	50					55					60				
Asp	Leu	Ala	Glu	Thr	Leu	Lys									
65					70										

<210> 14
 <211> 70
 <212> PRT
 <213> Myxoma virus

<400> 14
 Val Leu Glu Asn Leu Ser Asp Tyr Gln Phe Lys Met Phe Ile Tyr Leu

1	5	10	15
Ala Met Glu Asp Leu Tyr Ile Glu Arg Ala Glu Lys Glu Lys Ile Asp			
20	25	30	
Arg Ile Asp Leu Ala His Lys Ile Ser Glu Gln Tyr Leu Gly Thr Asp			
35	40	45	
Tyr Ile Glu Phe Met Lys Arg Val Thr Asp Phe Ile Pro Asn Lys Val			
50	55	60	
Tyr Val Asp Ser Leu Leu			
65	70		

<210> 15
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 <212> DNA
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<220>
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 <222> (1)...(2985)

<221> misc_feature
 <222> (1)...(1857)
 <223> n = A,T,C or G

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gag ctc aaa aag gag gag ttc agg aaa ttt aaa gaa cat ctc aag caa	96
Glu Leu Lys Lys Glu Glu Phe Arg Lys Phe Lys Glu His Leu Lys Gln	
20 25 30	
atg act ttg cag ctt gaa ctc aag cag att ccc tgg act gag gtc aaa	144
Met Thr Leu Gln Leu Glu Leu Lys Gln Ile Pro Trp Thr Glu Val Lys	
35 40 45	
aaa gca tcc cgg gaa gaa ctt gca aac ctc ttg atc aag cac tat gaa	192
Lys Ala Ser Arg Glu Glu Leu Ala Asn Leu Leu Ile Lys His Tyr Glu	
50 55 60	
gaa caa caa gct tgg aac ata acc tta aga atc ttt caa aag atg gat	240
Glu Gln Gln Ala Trp Asn Ile Thr Leu Arg Ile Phe Gln Lys Met Asp	
65 70 75 80	
aga aag gat ctc tgc atg aag gtc atg agg gag aga aca gga tac aca	288 ^a
Arg Lys Asp Leu Cys Met Lys Val Met Arg Glu Arg Thr Gly Tyr Thr	
85 90 95	
aag acc tat caa gct cac gca aag cag aaa ttc agc cgc tta tgg tcc	336
Lys Thr Tyr Gln Ala His Ala Lys Gln Lys Phe Ser Arg Leu Trp Ser	
100 105 110	

agc aag tct gtc act gag att cac cta tac ttt gag gag gaa gtc aag	384
Ser Lys Ser Val Thr Glu Ile His Leu Tyr Phe Glu Glu Glu Val Lys	
115 120 125	
caa gaa gaa tgt gac cat ttg gac cgc ctt ttt gct ccc aag gaa act	432
Gln Glu Glu Cys Asp His Leu Asp Arg Leu Phe Ala Pro Lys Glu Thr	
130 135 140	
ggg aaa cag cca cgt aca gtg att att caa gga cca caa gga att gga	480
Gly Lys Gln Pro Arg Thr Val Ile Ile Gln Gly Pro Gln Gly Ile Gly	
145 150 155 160	
aaa acg aca ctc ctg atg aag ctg atg atg gcc tgg tcg gac aac aag	528
Lys Thr Thr Leu Leu Met Lys Leu Met Met Ala Trp Ser Asp Asn Lys	
165 170 175	
atc ttt ggg gat agg ttc ctg tac acg ttc tat ttc tgc tgc aga gaa	576
Ile Phe Arg Asp Arg Phe Leu Tyr Thr Phe Tyr Phe Cys Cys Arg Glu	
180 185 190	
ctg agg gag ttg ccg cca acg agt ttg gct gac ttg att tcc aga gag	624
Leu Arg Glu Leu Pro Pro Thr Ser Leu Ala Asp Leu Ile Ser Arg Glu	
195 200 205	
tgg cct gac ccc gct gct cct ata aca gag atc gtg tct caa ccg gag	672
Trp Pro Asp Pro Ala Ala Pro Ile Thr Glu Ile Val Ser Gln Pro Glu	
210 215 220	
aga ctc ttg ttc gtc atc gac agc ttc gaa gag ctg cag ggc ggc ttg	720
Arg Leu Leu Phe Val Ile Asp Ser Phe Glu Glu Leu Gln Gly Gly Leu	
225 230 235 240	
aac gaa ccc gat tcg gat ctg tgt ggt gac ttg atg gag aaa cgg ccg	768
Asn Glu Pro Asp Ser Asp Leu Cys Gly Asp Leu Met Glu Lys Arg Pro	
245 250 255	
gtg cag gtg ctt ctg agc agt ttg ctg agg aag aag atg ctc ccg gag	816
Val Gln Val Leu Leu Ser Ser Leu Leu Arg Lys Lys Met Leu Pro Glu	
260 265 270	
gcc tcc ctg ctc atc gcc atc aaa ccc gtg tgc ccg aag gag ctc cgg	864
Ala Ser Leu Leu Ile Ala Ile Lys Pro Val Cys Pro Lys Glu Leu Arg	
275 280 285	
gat cag gtg acg atc tca gaa atc tac cag ccc cgg gga ttc aac gag	912
Asp Gln Val Thr Ile Ser Glu Ile Tyr Gln Pro Arg Gly Phe Asn Glu	
290 295 300	
agt gat agg tta gtg tat ttc tgc tgt ttc ttc aaa gac ccg aaa aga	960
Ser Asp Arg Leu Val Tyr Phe Cys Cys Phe Phe Lys Asp Pro Lys Arg	
305 310 315 320	
gcc atg gaa gcc ttc aat ctt gta aga gaa agt gaa cag ctg ttt tcc	1008

Ala Met Glu Ala Phe Asn Leu Val Arg Glu Ser Glu Gln Leu Phe Ser	
325 330 335	
ata tgc caa atc ccg ctc ctc tgc tgg atc ctg tgt acc agt ctg aag	1056
Ile Cys Gln Ile Pro Leu Leu Cys Trp Ile Leu Cys Thr Ser Leu Lys	
340 345 350	
caa gag atg cag aaa gga aaa gac ctg gcc ctg acc tgc cag agc act	1104
Gln Glu Met Gln Lys Gly Lys Asp Leu Ala Leu Thr Cys Gln Ser Thr	
355 360 365	
acc tct gtg tac tcc tct ttc gtc ttt aac ctg ttc aca cct gag ggt	1152
Thr Ser Val Tyr Ser Ser Phe Val Phe Asn Leu Phe Thr Pro Glu Gly	
370 375 380	
gcc gag ggc ccg act ccg caa acc cag cac cag ctg aag gcc ctg tgc	1200
Ala Glu Gly Pro Thr Pro Gln Thr Gln His Gln Leu Lys Ala Leu Cys	
385 390 395 400	
tcc ctg gct gca gag ggt atg tgg aca gac aca ttt gag ttt tgt gaa	1248
Ser Leu Ala Ala Glu Gly Met Trp Thr Asp Thr Phe Glu Phe Cys Glu	
405 410 415	
gac gac ctc cgg aga aat ggg gtt gtt gac gct gac atc cct gcg ctg	1296
Asp Asp Leu Arg Arg Asn Gly Val Val Asp Ala Asp Ile Pro Ala Leu	
420 425 430	
ctg ggc acc aag ata ctt ctg aag tac ggg gag cgt gag agc tcc tac	1344
Leu Gly Thr Lys Ile Leu Leu Lys Tyr Gly Glu Arg Glu Ser Ser Tyr	
435 440 445	
gtg ttc ctc cac gtg tgt atc cag gag ttc tgt gcc gcc ttg ttc tat	1392
Val Phe Leu His Val Cys Ile Gln Glu Phe Cys Ala Ala Leu Phe Tyr	
450 455 460	
ttg ctc aag agc cat ctt gat cat cct cac cca gct gtg aga tgt gta	1440
Leu Leu Lys Ser His Leu Asp His Pro His Pro Ala Val Arg Cys Val	
465 470 475 480	
cag gaa ttg cta gtt gcc aat ttt gaa aaa gca agg aga gca cat tgg	1488
Gln Glu Leu Leu Val Ala Asn Phe Glu Lys Ala Arg Arg Ala His Trp	
485 490 495	
att ttt ttg ggg tgt ttt cta act ggc ctt tta aat aaa aag gaa caa	1536
Ile Phe Leu Gly Cys Phe Leu Thr Gly Leu Leu Asn Lys Lys Glu Gln	
500 505 510	
gaa aaa ctg gat gcg ttt ttt ggc ttc caa ctg tcc caa gag ata aag	1584
Glu Lys Leu Asp Ala Phe Phe Gly Phe Gln Leu Ser Gln Glu Ile Lys	
515 520 525	
cag caa att cac cag tgc ctg aag agc tta ggg gag cgt ggc aat cct	1632
Gln Gln Ile His Gln Cys Leu Lys Ser Leu Gly Glu Arg Gly Asn Pro	

530	535	540	
cag gga cag gtg gat tcc ttg gcg ata ttt tac tgt ctc ttt gaa atg			1680
Gln Gly Gln Val Asp Ser Leu Ala Ile Phe Tyr Cys Leu Phe Glu Met			
545	550	555	560
cag gat cct gcc ttt gtg aag cag gca gtg aac ctc ctc caa gaa gct			1728
Gln Asp Pro Ala Phe Val Lys Gln Ala Val Asn Leu Leu Gln Glu Ala			
	565	570	575
aac ttt cat att att gac aac gtg gac ttg gtg gtt tct gcc tac tgc			1776
Asn Phe His Ile Ile Asp Asn Val Asp Leu Val Val Ser Ala Tyr Cys			
	580	585	590
tta aaa tac tgc tcc agc ttg agg aaa ctc tgt ttt tcc gtt caa aat			1824
Leu Lys Tyr Cys Ser Ser Leu Arg Lys Leu Cys Phe Ser Val Gln Asn			
	595	600	605
gtc ttt aag aaa gag gat gaa cac agc tct acg tcg gat tac agc ctc			1872
Val Phe Lys Lys Glu Asp Glu His Ser Ser Thr Ser Asp Tyr Ser Leu			
610	615	620	
atc tgt tgg cat cac atc tgc tct gtg ctc acc acc agc ggg cac ctc			1920
Ile Cys Trp His His Ile Cys Ser Val Leu Thr Thr Ser Gly His Leu			
625	630	635	640
aga gag ctc cag gtg cag gac agc acc ctc agc gag tcg acc ttt gtg			1968
Arg Glu Leu Gln Val Gln Asp Ser Thr Leu Ser Glu Ser Thr Phe Val			
	645	650	655
acc tgg tgt aac cag ctg agg cat ccc agc tgt cgc ctt cag aag ctt			2016
Thr Trp Cys Asn Gln Leu Arg His Pro Ser Cys Arg Leu Gln Lys Leu			
	660	665	670
gga ata aat aac gtt tcc ttt tct ggc cag agt gtt ctg ctc ttt gag			2064
Gly Ile Asn Asn Val Ser Phe Ser Gly Gln Ser Val Leu Leu Phe Glu			
	675	680	685
gtg ctc ttt tat cag cca gac ttg aaa tac ctg agc ttc acc ctc acg			2112
Val Leu Phe Tyr Gln Pro Asp Leu Lys Tyr Leu Ser Phe Thr Leu Thr			
690	695	700	
aaa ctc tct cgt gat gac atc agg tcc ctc tgt gat gcc ttg aac tac			2160
Lys Leu Ser Arg Asp Asp Ile Arg Ser Leu Cys Asp Ala Leu Asn Tyr			
705	710	715	720
cca gca ggc aac gtc aaa gag cta gcg ctg gta aat tgt cac ctc tca			2208
Pro Ala Gly Asn Val Lys Glu Leu Ala Leu Val Asn Cys His Leu Ser			
	725	730	735
ccc att gat tgt gaa gtc ctt gct ggc ctt cta acc aac aac aag aag			2256
Pro Ile Asp Cys Glu Val Leu Ala Gly Leu Leu Thr Asn Asn Lys Lys			
	740	745	750

ctg acg tat ctg aat gta tcc tgc aac cag tta gac aca ggc gtg ccc	2304
Leu Thr Tyr Leu Asn Val Ser Cys Asn Gln Leu Asp Thr Gly Val Pro	
755 760 765	
ctt ttg tgt gaa gcc ctg tgc agc cca gac acg gtc ctg gta tac ctg	2352
Leu Leu Cys Glu Ala Leu Cys Ser Pro Asp Thr Val Leu Val Tyr Leu	
770 775 780	
atg ttg gct ttc tgc cac ctc agc gag cag tgc tgc gaa tac atc tct	2400
Met Leu Ala Phe Cys His Leu Ser Glu Gln Cys Cys Glu Tyr Ile Ser	
785 790 795 800	
gaa atg ctt ctg cgt aac aag agc gtg cgc tat cta gac ctc agt gcc	2448
Glu Met Leu Leu Arg Asn Lys Ser Val Arg Tyr Leu Asp Leu Ser Ala	
805 810 815	
aat gtc ctg aag gac gaa gga ctg aaa act ctc tgc gag gcc ttg aaa	2496
Asn Val Leu Lys Asp Glu Gly Leu Lys Thr Leu Cys Glu Ala Leu Lys	
820 825 830	
cat ccg gac tgc tgc ctg gat tca ctg tgt ttg gta aaa tgt ttt atc	2544
His Pro Asp Cys Cys Leu Asp Ser Leu Cys Leu Val Lys Cys Phe Ile	
835 840 845	
act gct gct ggc tgt gaa gac ctc gcc tct gct ctc atc agc aat caa	2592
Thr Ala Ala Gly Cys Glu Asp Leu Ala Ser Ala Leu Ile Ser Asn Gln	
850 855 860	
aac ctg aag att ctg caa att ggg tgc aat gaa atc gga gat gtg ggt	2640
Asn Leu Lys Ile Leu Gln Ile Gly Cys Asn Glu Ile Gly Asp Val Gly	
865 870 875 880	
gtg cag ctg ttg tgt cgg gct ctg acg cat acg gat tgc cgc tta gag	2688
Val Gln Leu Leu Cys Arg Ala Leu Thr His Thr Asp Cys Arg Leu Glu	
885 890 895	
att ctt ggg ttg gaa gaa tgt ggg tta acg agc acc tgc tgt aag gat	2736
Ile Leu Gly Leu Glu Glu Cys Gly Leu Thr Ser Thr Cys Cys Lys Asp	
900 905 910	
ctc gcg tct gtt ctc acc tgc agt aag acc ctg cag cag ctc aac ctg	2784
Leu Ala Ser Val Leu Thr Cys Ser Lys Thr Leu Gln Gln Leu Asn Leu	
915 920 925	
acc ttg aac acc ttg gac cac aca ggg gtg gtt gta ctc tgt gag gcc	2832
Thr Leu Asn Thr Leu Asp His Thr Gly Val Val Leu Leu Cys Glu Ala	
930 935 940	
ctg aga cac cca gag tgt gcc ctg cag gtg ctc ggg ctg aga aaa act	2880
Leu Arg His Pro Glu Cys Ala Leu Gln Val Leu Gly Leu Arg Lys Thr	
945 950 955 960	

gat ttt gat gag gaa acc cag gca ctt ctg acg gct gag gaa gag aga 2928
 Asp Phe Asp Glu Glu Thr Gln Ala Leu Leu Thr Ala Glu Glu Glu Arg
 965 970 975

aat cct aac ctg acc atc aca gac gac tgt gac aca atc aca agg gta 2976
 Asn Pro Asn Leu Thr Ile Thr Asp Asp Cys Asp Thr Ile Thr Arg Val
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gag atc tga 2985
 Glu Ile *

<210> 16
 <211> 994
 <212> PRT
 <213> Homo sapien

<400> 16
 Met Ala Ala Ser Phe Phe Ser Asp Phe Gly Leu Met Trp Tyr Leu Glu
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 20 25 30
 Met Thr Leu Gln Leu Glu Leu Lys Gln Ile Pro Trp Thr Glu Val Lys
 35 40 45
 Lys Ala Ser Arg Glu Glu Leu Ala Asn Leu Leu Ile Lys His Tyr Glu
 50 55 60
 Glu Gln Gln Ala Trp Asn Ile Thr Leu Arg Ile Phe Gln Lys Met Asp
 65 70 75 80
 Arg Lys Asp Leu Cys Met Lys Val Met Arg Glu Arg Thr Gly Tyr Thr
 85 90 95
 Lys Thr Tyr Gln Ala His Ala Lys Gln Lys Phe Ser Arg Leu Trp Ser
 100 105 110
 Ser Lys Ser Val Thr Glu Ile His Leu Tyr Phe Glu Glu Glu Val Lys
 115 120 125
 Gln Glu Glu Cys Asp His Leu Asp Arg Leu Phe Ala Pro Lys Glu Thr
 130 135 140
 Gly Lys Gln Pro Arg Thr Val Ile Ile Gln Gly Pro Gln Gly Ile Gly
 145 150 155 160
 Lys Thr Thr Leu Leu Met Lys Leu Met Met Ala Trp Ser Asp Asn Lys
 165 170 175
 Ile Phe Arg Asp Arg Phe Leu Tyr Thr Phe Tyr Phe Cys Cys Arg Glu
 180 185 190
 Leu Arg Glu Leu Pro Pro Thr Ser Leu Ala Asp Leu Ile Ser Arg Glu
 195 200 205
 Trp Pro Asp Pro Ala Ala Pro Ile Thr Glu Ile Val Ser Gln Pro Glu
 210 215 220
 Arg Leu Leu Phe Val Ile Asp Ser Phe Glu Glu Leu Gln Gly Gly Leu
 225 230 235 240
 Asn Glu Pro Asp Ser Asp Leu Cys Gly Asp Leu Met Glu Lys Arg Pro
 245 250 255
 Val Gln Val Leu Leu Ser Ser Leu Leu Arg Lys Lys Met Leu Pro Glu
 260 265 270

Ala	Ser	Leu	Leu	Ile	Ala	Ile	Lys	Pro	Val	Cys	Pro	Lys	Glu	Leu	Arg	
		275					280					285				
Asp	Gln	Val	Thr	Ile	Ser	Glu	Ile	Tyr	Gln	Pro	Arg	Gly	Phe	Asn	Glu	
	290					295					300					
Ser	Asp	Arg	Leu	Val	Tyr	Phe	Cys	Cys	Phe	Phe	Lys	Asp	Pro	Lys	Arg	
305					310					315					320	
Ala	Met	Glu	Ala	Phe	Asn	Leu	Val	Arg	Glu	Ser	Glu	Gln	Leu	Phe	Ser	
				325					330						335	
Ile	Cys	Gln	Ile	Pro	Leu	Leu	Cys	Trp	Ile	Leu	Cys	Thr	Ser	Leu	Lys	
			340					345					350			
Gln	Glu	Met	Gln	Lys	Gly	Lys	Asp	Leu	Ala	Leu	Thr	Cys	Gln	Ser	Thr	
		355					360					365				
Thr	Ser	Val	Tyr	Ser	Ser	Phe	Val	Phe	Asn	Leu	Phe	Thr	Pro	Glu	Gly	
	370					375					380					
Ala	Glu	Gly	Pro	Thr	Pro	Gln	Thr	Gln	His	Gln	Leu	Lys	Ala	Leu	Cys	
385					390					395					400	
Ser	Leu	Ala	Ala	Glu	Gly	Met	Trp	Thr	Asp	Thr	Phe	Glu	Phe	Cys	Glu	
				405					410						415	
Asp	Asp	Leu	Arg	Arg	Asn	Gly	Val	Val	Asp	Ala	Asp	Ile	Pro	Ala	Leu	
		420						425					430			
Leu	Gly	Thr	Lys	Ile	Leu	Leu	Lys	Tyr	Gly	Glu	Arg	Glu	Ser	Ser	Tyr	
		435					440					445				
Val	Phe	Leu	His	Val	Cys	Ile	Gln	Glu	Phe	Cys	Ala	Ala	Leu	Phe	Tyr	
	450					455					460					
Leu	Leu	Lys	Ser	His	Leu	Asp	His	Pro	His	Pro	Ala	Val	Arg	Cys	Val	
465					470					475					480	
Gln	Glu	Leu	Leu	Val	Ala	Asn	Phe	Glu	Lys	Ala	Arg	Arg	Ala	His	Trp	
				485					490						495	
Ile	Phe	Leu	Gly	Cys	Phe	Leu	Thr	Gly	Leu	Leu	Asn	Lys	Lys	Glu	Gln	
			500					505					510			
Glu	Lys	Leu	Asp	Ala	Phe	Phe	Gly	Phe	Gln	Leu	Ser	Gln	Glu	Ile	Lys	
		515					520					525				
Gln	Gln	Ile	His	Gln	Cys	Leu	Lys	Ser	Leu	Gly	Glu	Arg	Gly	Asn	Pro	
	530					535					540					
Gln	Gly	Gln	Val	Asp	Ser	Leu	Ala	Ile	Phe	Tyr	Cys	Leu	Phe	Glu	Met	
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Gln	Asp	Pro	Ala	Phe	Val	Lys	Gln	Ala	Val	Asn	Leu	Leu	Gln	Glu	Ala	
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Asn	Phe	His	Ile	Asp	Asn	Val	Asp	Leu	Val	Val	Ser	Ala	Tyr	Cys		
		580					585					590				
Leu	Lys	Tyr	Cys	Ser	Ser	Leu	Arg	Lys	Leu	Cys	Phe	Ser	Val	Gln	Asn	
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Val	Phe	Lys	Lys	Glu	Asp											

690	695	700
Lys Leu Ser Arg Asp Asp Ile Arg Ser Leu Cys Asp Ala Leu Asn Tyr		
705	710	715
Pro Ala Gly Asn Val Lys Glu Leu Ala Leu Val Asn Cys His Leu Ser		
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Pro Ile Asp Cys Glu Val Leu Ala Gly Leu Leu Thr Asn Asn Lys Lys		
	740	745
Leu Thr Tyr Leu Asn Val Ser Cys Asn Gln Leu Asp Thr Gly Val Pro		
	755	760
Leu Leu Cys Glu Ala Leu Cys Ser Pro Asp Thr Val Leu Val Tyr Leu		
	770	775
Met Leu Ala Phe Cys His Leu Ser Glu Gln Cys Cys Glu Tyr Ile Ser		
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Glu Met Leu Leu Arg Asn Lys Ser Val Arg Tyr Leu Asp Leu Ser Ala		
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Asn Val Leu Lys Asp Glu Gly Leu Lys Thr Leu Cys Glu Ala Leu Lys		
	820	825
His Pro Asp Cys Cys Leu Asp Ser Leu Cys Leu Val Lys Cys Phe Ile		
	835	840
Thr Ala Ala Gly Cys Glu Asp Leu Ala Ser Ala Leu Ile Ser Asn Gln		
	850	855
Asn Leu Lys Ile Leu Gln Ile Gly Cys Asn Glu Ile Gly Asp Val Gly		
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Val Gln Leu Leu Cys Arg Ala Leu Thr His Thr Asp Cys Arg Leu Glu		
	885	890
Ile Leu Gly Leu Glu Glu Cys Gly Leu Thr Ser Thr Cys Cys Lys Asp		
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Leu Ala Ser Val Leu Thr Cys Ser Lys Thr Leu Gln Gln Leu Asn Leu		
	915	920
Thr Leu Asn Thr Leu Asp His Thr Gly Val Val Val Leu Cys Glu Ala		
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Leu Arg His Pro Glu Cys Ala Leu Gln Val Leu Gly Leu Arg Lys Thr		
	945	950
Asp Phe Asp Glu Glu Thr Gln Ala Leu Leu Thr Ala Glu Glu Glu Arg		
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Asn Pro Asn Leu Thr Ile Thr Asp Asp Cys Asp Thr Ile Thr Arg Val		
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Glu Ile		990

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Val Ala Arg Glu Leu Leu Leu Ala Ala Leu Glu Glu Leu Ser Gln Glu				
20		25	30	
cag ctg aag cgc ttc cgc cac aag ctg cgc gac gtg ggc ccg gac gga				144
Gln Leu Lys Arg Phe Arg His Lys Leu Arg Asp Val Gly Pro Asp Gly				
35		40	45	
cgc agc atc ccg tgg ggg cgg ctg gag cgc gcg gac gcc gtg gac ctc				192
Arg Ser Ile Pro Trp Gly Arg Leu Glu Arg Ala Asp Ala Val Asp Leu				
50		55	60	
gcg gag cag ctg gcc cag ttc tac ggc ccg gag cct gcc ctg gag gtg				240
Ala Glu Gln Leu Ala Gln Phe Tyr Gly Pro Glu Pro Ala Leu Glu Val				
65		70	75	80
gcc cgc aag acc ctc aag agg gcg gac gcg cgc gac gtg gcg gcg cag				288
Ala Arg Lys Thr Leu Lys Arg Ala Asp Ala Arg Asp Val Ala Ala Gln				
85		90	95	
ctc cag gag cgg cgg ctg cag cgg ctc ggg ctc ggc tcc ggg acg ctg				336
Leu Gln Glu Arg Arg Leu Gln Arg Leu Gly Leu Gly Ser Gly Thr Leu				
100		105	110	
ctc tcc gtg tcc gag tac aag aag aag tac cgg gag cac gtg ctg cag				384
Leu Ser Val Ser Glu Tyr Lys Lys Lys Tyr Arg Glu His Val Leu Gln				
115		120	125	
ctg cac gct cgg gtg aag gag agg aac gcc cgc tcc gtg aag atc acc				432
Leu His Ala Arg Val Lys Glu Arg Asn Ala Arg Ser Val Lys Ile Thr				
130		135	140	
aag cgc ttc acc aag ctg ctc atc gcg ccc gag agc gcc gcc ccg gag				480
Lys Arg Phe Thr Lys Leu Leu Ile Ala Pro Glu Ser Ala Ala Pro Glu				
145		150	155	160
gag gcg ctg ggg ccc gcg gaa gag cct gag ccg ggg cgc gcg cgg cgc				528
Glu Ala Leu Gly Pro Ala Glu Glu Pro Glu Pro Gly Arg Ala Arg Arg				
165		170	175	
tcg gac acg cac act ttc aac cgc ctc ttc cgc cgc gac gag gag ggc				576
Ser Asp Thr His Thr Phe Asn Arg Leu Phe Arg Arg Asp Glu Glu Gly				
180		185	190	
cgg cgg ccg ctg acc gtg gtg ctg cag ggc ccg gcg ggc atc ggc aag				624
Arg Arg Pro Leu Thr Val Val Leu Gln Gly Pro Ala Gly Ile Gly Lys				
195		200	205	
acc atg gcg gcc aaa aag atc ctg tac gac tgg gcg gcg ggc aag ctg				672
Thr Met Ala Ala Lys Lys Ile Leu Tyr Asp Trp Ala Ala Gly Lys Leu				
210		215	220	

tac cag ggc cag gtg gac ttc gcc ttc ttc atg ccc tgc ggc gag ctg	720
Tyr Gln Gly Gln Val Asp Phe Ala Phe Phe Met Pro Cys Gly Glu Leu	
225 230 235 240	
ctg gag agg ccg ggc acg cgc agc ctg gct gac ctg atc ctg gac cag	768
Leu Glu Arg Pro Gly Thr Arg Ser Leu Ala Asp Leu Ile Leu Asp Gln	
245 250 255	
tgc ccc gac cgc ggc gcg ccg gtg ccg cag atg ctg gcc cag ccg cag	816
Cys Pro Asp Arg Gly Ala Pro Val Pro Gln Met Leu Ala Gln Pro Gln	
260 265 270	
cgg ctg ctc ttc atc ctg gac ggc gcg gac gag ctg ccg gcg ctg ggg	864
Arg Leu Leu Phe Ile Leu Asp Gly Ala Asp Glu Leu Pro Ala Leu Gly	
275 280 285	
ggc ccc gag gcc gcg ccc tgc aca gac ccc ttc gag gcg gcg agc ggc	912
Gly Pro Glu Ala Ala Pro Cys Thr Asp Pro Phe Glu Ala Ala Ser Gly	
290 295 300	
gcg cgg gtg cta ggc ggg ctg ctg agc aag gcg ctg ctg ccc acg gcc	960
Ala Arg Val Leu Gly Gly Leu Leu Ser Lys Ala Leu Leu Pro Thr Ala	
305 310 315 320	
ctc ctg ctg gtg acc acg cgc gcc gcc gcc ccc ggg agg ctg cag ggc	1008
Leu Leu Leu Val Thr Thr Arg Ala Ala Ala Pro Gly Arg Leu Gln Gly	
325 330 335	
cgc ctg tgt tcc ccg cag tgc gcc gag gtg cgc ggc ttc tcc gac aag	1056
Arg Leu Cys Ser Pro Gln Cys Ala Glu Val Arg Gly Phe Ser Asp Lys	
340 345 350	
gac, aag aag aag tat ttc tac aag ttc ttc cgg gat gag agg agg gcc	1104
Asp Lys Lys Lys Tyr Phe Tyr Lys Phe Phe Arg Asp Glu Arg Arg Ala	
355 360 365	
gag cgc gcc tac cgc ttc gtg aag gag aac gag acg ctg ttc gcg ctg	1152
Glu Arg Ala Tyr Arg Phe Val Lys Glu Asn Glu Thr Leu Phe Ala Leu	
370 375 380	
tgc ttc gtg ccc ttc gtg tgc tgg atc gtg tgc acc gtg ctg cgc cag	1200
Cys Phe Val Pro Phe Val Cys Trp Ile Val Cys Thr Val Leu Arg Gln	
385 390 395 400	
cag ctg gag ctc ggt cgg gac ctg tcg cgc acg tcc aag acc acc acg	1248
Gln Leu Glu Leu Gly Arg Asp Leu Ser Arg Thr Ser Lys Thr Thr Thr	
405 410 415	
tca gtg tac ctg ctt ttc atc acc agc gtt ctg agc tcg gct ccg gta	1296
Ser Val Tyr Leu Leu Phe Ile Thr Ser Val Leu Ser Ser Ala Pro Val	
420 425 430	

gcc gac ggg ccc cgg ttg cag ggc gac ctg cgc aat ctg tgc cgc ctg	1344
Ala Asp Gly Pro Arg Leu Gln Gly Asp Leu Arg Asn Leu Cys Arg Leu	
435 440 445	
gcc cgc gag ggc gtc ctc gga cgc agg gcg cag ttt gcc gag aag gaa	1392
Ala Arg Glu Gly Val Leu Gly Arg Arg Ala Gln Phe Ala Glu Lys Glu	
450 455 460	
ctg gag caa ctg gag ctt cgt ggc tcc aaa gtg cag acg ctg ttt ctc	1440
Leu Glu Gln Leu Glu Leu Arg Gly Ser Lys Val Gln Thr Leu Phe Leu	
465 470 475 480	
agc aaa aag gag ctg ccg ggc gtg ctg gag aca gag gtc acc tac cag	1488
Ser Lys Lys Glu Leu Pro Gly Val Leu Glu Thr Glu Val Thr Tyr Gln	
485 490 495	
ttc atc gac cag agc ttc cag gag ttc ctc gcg gca ctg tcc tac ctg	1536
Phe Ile Asp Gln Ser Phe Gln Glu Phe Leu Ala Ala Leu Ser Tyr Leu	
500 505 510	
ctg gag gac ggc ggg gtg ccc agg acc gcg gct ggc ggc gtt ggg aca	1584
Leu Glu Asp Gly Gly Val Pro Arg Thr Ala Ala Gly Gly Val Gly Thr	
515 520 525	
ctc ctg cgt ggg gac gcc cag ccg cac agc cac ttg gtg ctc acc acg	1632
Leu Leu Arg Gly Asp Ala Gln Pro His Ser His Leu Val Leu Thr Thr	
530 535 540	
cgc ttc ctc ttc gga ctg ctg agc gcg gag cgg atg cgc gac atc gag	1680
Arg Phe Leu Phe Gly Leu Leu Ser Ala Glu Arg Met Arg Asp Ile Glu	
545 550 555 560	
cgc cac ttc ggc tgc atg gtt tca gag cgt gtg aag cag gag gcc ctg	1728
Arg His Phe Gly Cys Met Val Ser Glu Arg Val Lys Gln Glu Ala Leu	
565 570 575	
cgg tgg gtg cag gga cag gga cag ggc tgc ccc gga gtg gca cca gag	1776
Arg Trp Val Gln Gly Gln Gly Gln Gly Cys Pro Gly Val Ala Pro Glu	
580 585 590	
gtg acc gag ggg gcc aaa ggg ctc gag gac acc gaa gag cca gag gag	1824
Val Thr Glu Gly Ala Lys Gly Leu Glu Asp Thr Glu Glu Pro Glu Glu	
595 600 605	
gag gag gag gga gag gag ccc aac tac cca ctg gag ttg ctg tac tgc	1872
Glu Glu Glu Gly Glu Glu Pro Asn Tyr Pro Leu Glu Leu Leu Tyr Cys	
610 615 620	
ctg tac gag acg cag gag gac gcg ttt gtg cgc caa gcc ctg tgc cgg	1920
Leu Tyr Glu Thr Gln Glu Asp Ala Phe Val Arg Gln Ala Leu Cys Arg	
625 630 635 640	
ttc ccg gag ctg gcg ctg cag cga gtg cgc ttc tgc cgc atg gac gtg	1968

Phe	Pro	Glu	Leu	Ala	Leu	Gln	Arg	Val	Arg	Phe	Cys	Arg	Met	Asp	Val	
				645					650					655		
gct	gtt	ctg	agc	tac	tgc	gtg	agg	tgc	tgc	cct	gct	gga	cag	gca	ctg	2016
Ala	Val	Leu	Ser	Tyr	Cys	Val	Arg	Cys	Cys	Pro	Ala	Gly	Gln	Ala	Leu	
				660				665					670			
cgg	ctg	atc	agc	tgc	aga	ttg	gtt	gct	gcg	cag	gag	aag	aag	aag	aag	2064
Arg	Leu	Ile	Ser	Cys	Arg	Leu	Val	Ala	Ala	Gln	Glu	Lys	Lys	Lys	Lys	
				675				680					685			
agc	ctg	ggg	aag	cgg	ctc	cag	gcc	agc	ctg	ggg	ggc	ggc	agc	tgg	ctg	2112
Ser	Leu	Gly	Lys	Arg	Leu	Gln	Ala	Ser	Leu	Gly	Gly	Gly	Ser	Trp	Leu	
				690				695					700			
ggg	acc	caa	ctg	gct	cca	gaa	gta	ccc	ttt	cga	cca	ccc	tgc	tgt	gac	2160
Gly	Thr	Gln	Leu	Ala	Pro	Glu	Val	Pro	Phe	Arg	Pro	Pro	Cys	Cys	Asp	
				705				710					715		720	
atc	tgc	ccc	aca	cct	cca	cca	gac	cct	cgg	ctc	ctc	cag	ggc	aag	gct	2208
Ile	Cys	Pro	Thr	Pro	Pro	Pro	Asp	Pro	Arg	Leu	Leu	Gln	Gly	Lys	Ala	
				725				730						735		
ttt	gcc	aga	gtt	cct	ttg	aat	ata	gct	cca	att	cag	ccc	ctg	ccc	agg	2256
Phe	Ala	Arg	Val	Pro	Leu	Asn	Ile	Ala	Pro	Ile	Gln	Pro	Leu	Pro	Arg	
				740				745					750			
ggc	ttg	gca	tct	gtt	gag	agg	atg	aat	gtc	acg	gtg	ttg	gca	ggg	gct	2304
Gly	Leu	Ala	Ser	Val	Glu	Arg	Met	Asn	Val	Thr	Val	Leu	Ala	Gly	Ala	
				755				760					765			
ggg	cct	ggg	gac	cca	aag	acc	cat	gca	atg	act	gac	cca	ctg	tgc	cat	2352
Gly	Pro	Gly	Asp	Pro	Lys	Thr	His	Ala	Met	Thr	Asp	Pro	Leu	Cys	His	
				770				775				780				
ctg	agc	agc	ctc	acg	ctg	tcc	cac	tgc	aaa	ctc	cct	gac	gcg	gtc	tgc	2400
Leu	Ser	Ser	Leu	Thr	Leu	Ser	His	Cys	Lys	Leu	Pro	Asp	Ala	Val	Cys	
				785				790				795			800	
cga	gac	ctt	tct	gag	gcc	ctg	agg	gca	gcc	ccc	gca	ctg	acg	gag	ctg	2448
Arg	Asp	Leu	Ser	Glu	Ala	Leu	Arg	Ala	Ala	Pro	Ala	Leu	Thr	Glu	Leu	
				805				810						815		
ggc	ctc	ctc	cac	aac	agg	ctc	agt	gag	gca	gga	ctg	cgt	atg	ctg	agt	2496
Gly	Leu	Leu	His	Asn	Arg	Leu	Ser	Glu	Ala	Gly	Leu	Arg	Met	Leu	Ser	
				820				825					830			
gag	ggc	cta	gcc	tgg	ccg	cag	tgc	agg	gtg	cag	acg	gtc	agg	gta	cag	2544
Glu	Gly	Leu	Ala	Trp	Pro	Gln	Cys	Arg	Val	Gln	Thr	Val	Arg	Val	Gln	
				835				840					845			
ctg	cct	gac	ccc	cag	cga	ggg	ctc	cag	tac	ctg	gtg	ggg	atg	ctt	cgg	2592
Leu	Pro	Asp	Pro	Gln	Arg	Gly	Leu	Gln	Tyr	Leu	Val	Gly	Met	Leu	Arg	

850	855	860	
cag agc cct gcc ctg acc acc ctg gat ctc agc ggc tgc caa ctg ccc			2640
Gln Ser Pro Ala Leu Thr Thr Leu Asp Leu Ser Gly Cys Gln Leu Pro			
865	870	875	880
gcc ccc atg gtg acc tac ctg tgt gca gtc ctg cag cac cag gga tgc			2688
Ala Pro Met Val Thr Tyr Leu Cys Ala Val Leu Gln His Gln Gly Cys			
	885	890	895
ggc ctg cag acc ctc agt ctg gcc tct gtg gag ctg agc gag cag tca			2736
Gly Leu Gln Thr Leu Ser Leu Ala Ser Val Glu Leu Ser Glu Gln Ser			
	900	905	910
cta cag gag ctt cag gct gtg aag aga gca aag ccg gat ctg gtc atc			2784
Leu Gln Glu Leu Gln Ala Val Lys Arg Ala Lys Pro Asp Leu Val Ile			
	915	920	925
aca cac cca gcg ctg gac ggc cac cca caa cct ccc aag gaa ctc atc			2832
Thr His Pro Ala Leu Asp Gly His Pro Gln Pro Pro Lys Glu Leu Ile			
	930	935	940
tcg acc ttc tga			2844
Ser Thr Phe			
945			

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 <212> PRT
 <213> Homo sapien

<400> 18

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Gln Leu Lys Arg Phe Arg His Lys Leu Arg Asp Val Gly Pro Asp Gly			
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Arg Ser Ile Pro Trp Gly Arg Leu Glu Arg Ala Asp Ala Val Asp Leu			
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Ala Glu Gln Leu Ala Gln Phe Tyr Gly Pro Glu Pro Ala Leu Glu Val			
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Ala Arg Lys Thr Leu Lys Arg Ala Asp Ala Arg Asp Val Ala Ala Gln			
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Leu Gln Glu Arg Arg Leu Gln Arg Leu Gly Leu Gly Ser Gly Thr Leu			
	100	105	110
Leu Ser Val Ser Glu Tyr Lys Lys Lys Tyr Arg Glu His Val Leu Gln			
	115	120	125
Leu His Ala Arg Val Lys Glu Arg Asn Ala Arg Ser Val Lys Ile Thr			
	130	135	140
Lys Arg Phe Thr Lys Leu Leu Ile Ala Pro Glu Ser Ala Ala Pro Glu			
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			160

Glu	Ala	Leu	Gly	Pro	Ala	Glu	Glu	Pro	Glu	Pro	Gly	Arg	Ala	Arg	Arg		
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Ser	Asp	Thr	His	Thr	Phe	Asn	Arg	Leu	Phe	Arg	Arg	Asp	Glu	Glu	Gly		
			180					185					190				
Arg	Arg	Pro	Leu	Thr	Val	Val	Leu	Gln	Gly	Pro	Ala	Gly	Ile	Gly	Lys		
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Thr	Met	Ala	Ala	Lys	Lys	Ile	Leu	Tyr	Asp	Trp	Ala	Ala	Gly	Lys	Leu		
	210					215					220						
Tyr	Gln	Gly	Gln	Val	Asp	Phe	Ala	Phe	Phe	Met	Pro	Cys	Gly	Glu	Leu		
225					230					235					240		
Leu	Glu	Arg	Pro	Gly	Thr	Arg	Ser	Leu	Ala	Asp	Leu	Ile	Leu	Asp	Gln		
				245					250					255			
Cys	Pro	Asp	Arg	Gly	Ala	Pro	Val	Pro	Gln	Met	Leu	Ala	Gln	Pro	Gln		
			260					265					270				
Arg	Leu	Leu	Phe	Ile	Leu	Asp	Gly	Ala	Asp	Glu	Leu	Pro	Ala	Leu	Gly		
	275						280					285					
Gly	Pro	Glu	Ala	Ala	Pro	Cys	Thr	Asp	Pro	Phe	Glu	Ala	Ala	Ser	Gly		
	290					295					300						
Ala	Arg	Val	Leu	Gly	Gly	Leu	Leu	Ser	Lys	Ala	Leu	Leu	Pro	Thr	Ala		
305					310					315					320		
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Arg	Leu	Cys	Ser	Pro	Gln	Cys	Ala	Glu	Val	Arg	Gly	Phe	Ser	Asp	Lys		
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Asp	Lys	Lys	Lys	Tyr	Phe	Tyr	Lys	Phe	Phe	Arg	Asp	Glu	Arg	Arg	Ala		
	355						360					365					
Glu	Arg	Ala	Tyr	Arg	Phe	Val	Lys	Glu	Asn	Glu	Thr	Leu	Phe	Ala	Leu		
	370					375					380						
Cys	Phe	Val	Pro	Phe	Val	Cys	Trp	Ile	Val	Cys	Thr	Val	Leu	Arg	Gln		
385					390					395					400		
Gln	Leu	Glu	Leu	Gly	Arg	Asp	Leu	Ser	Arg	Thr	Ser	Lys	Thr	Thr	Thr		
				405					410					415			
Ser	Val	Tyr	Leu	Leu	Phe	Ile	Thr	Ser	Val	Leu	Ser	Ser	Ala	Pro	Val		
			420					425					430				
Ala	Asp	Gly	Pro	Arg	Leu	Gln	Gly	Asp	Leu	Arg	Asn	Leu	Cys	Arg	Leu		
	435						440					445					
Ala	Arg	Glu	Gly	Val	Leu	Gly	Arg	Arg	Ala	Gln	Phe	Ala	Glu	Lys	Glu		
	450					455				460							
Leu	Glu	Gln	Leu	Glu	Leu	Arg	Gly	Ser	Lys	Val	Gln	Thr	Leu	Phe	Leu		
465					470					475					480		
Ser	Lys	Lys	Glu	Leu	Pro	Gly	Val	Leu	Glu	Thr	Glu	Val	Thr	Tyr	Gln		
				485					490					495			
Phe	Ile	Asp	Gln	Ser	Phe	Gln	Glu	Phe	Leu	Ala	Ala	Leu	Ser	Tyr	Leu		
			500					505					510				
Leu	Glu	Asp	Gly	Gly	Val	Pro	Arg	Thr	Ala	Ala	Gly	Gly	Val	Gly	Thr		
	515						520					525					
Leu	Leu	Arg	Gly	Asp	Ala	Gln	Pro	His	Ser	His	Leu	Val	Leu	Thr	Thr		
	530					535					540						
Arg	Phe	Leu	Phe	Gly	Leu	Leu	Ser	Ala	Glu	Arg	Met	Arg	Asp	Ile	Glu		
545					550					555					560		
Arg	His	Phe	Gly	Cys	Met	Val	Ser	Glu	Arg	Val	Lys	Gln	Glu	Ala	Leu		
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<211> 2046
<212> DNA
<213> Homo sapien
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<213> Homo sapien

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<221> CDS

<222> (1)...(2043)

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Ser Ser Thr His Ser Ser His Ile Pro Pro Trp Thr Phe Ser Cys Tyr	
20 25 30	
ccc ggc tcc cca tgt gaa aat ggg gtc atg ctg tac atg aga aac gtg	144
Pro Gly Ser Pro Cys Glu Asn Gly Val Met Leu Tyr Met Arg Asn Val	
35 40 45	
agc cat gag gag cta caa cgg ttc aag cag ctc tta ctg act gag ctc	192
Ser His Glu Glu Leu Gln Arg Phe Lys Gln Leu Leu Leu Thr Glu Leu	
50 55 60	
agt act ggc acc atg ccc atc acc tgg gac cag gtc gag aca gcc agc	240
Ser Thr Gly Thr Met Pro Ile Thr Trp Asp Gln Val Glu Thr Ala Ser	
65 70 75 80	
tgg gca gag gtg gtt cat ctc ttg ata gag cgt ttc cct gga cga cgc	288
Trp Ala Glu Val Val His Leu Leu Ile Glu Arg Phe Pro Gly Arg Arg	
85 90 95	
gct tgg gat gtg act tcg aac atc ttt gcc att atg aac tgt gat aaa	336
Ala Trp Asp Val Thr Ser Asn Ile Phe Ala Ile Met Asn Cys Asp Lys	
100 105 110	
atg tgt gtt gta gtc cgc aga gag ata aat gcc att ctg cct acc ttg	384
Met Cys Val Val Val Arg Arg Glu Ile Asn Ala Ile Leu Pro Thr Leu	
115 120 125	
gaa cca gag gac ttg aat gtg gga gaa aca cag gtg aat ctg gag gaa	432
Glu Pro Glu Asp Leu Asn Val Gly Glu Thr Gln Val Asn Leu Glu Glu	
130 135 140	
gga gaa tct ggt aaa ata cgg cgg tat aaa tcg aat gtg atg gaa aag	480
Gly Glu Ser Gly Lys Ile Arg Arg Tyr Lys Ser Asn Val Met Glu Lys	
145 150 155 160	
ttt ttc ccc ata tgg gac att acg act tgg cct gga aac cag agg gac	528
Phe Phe Pro Ile Trp Asp Ile Thr Thr Trp Pro Gly Asn Gln Arg Asp	
165 170 175	
ttc ttc tac caa ggt gta cac agg cac gag gag tac tta cca tgt ctg	576
Phe Phe Tyr Gln Gly Val His Arg His Glu Glu Tyr Leu Pro Cys Leu	
180 185 190	

ctt ctg ccc aaa aga ccc cag ggt aga cag ccc aag acc gtg gcc ata	624
Leu Leu Pro Lys Arg Pro Gln Gly Arg Gln Pro Lys Thr Val Ala Ile	
195 200 205	
cag gga gct cct ggg atc gga aaa aca atc ctg gcc aaa aag gtg atg	672
Gln Gly Ala Pro Gly Ile Gly Lys Thr Ile Leu Ala Lys Lys Val Met	
210 215 220	
ttt gag tgg gcc aga aac aag ttc tac gcc cac aag cgc tgg tgt gct	720
Phe Glu Trp Ala Arg Asn Lys Phe Tyr Ala His Lys Arg Trp Cys Ala	
225 230 235 240	
ttc tac ttc cat tgc caa gag gtg aac cag acg aca gac cag agc ttc	768
Phe Tyr Phe His Cys Gln Glu Val Asn Gln Thr Thr Asp Gln Ser Phe	
245 250 255	
tcc gag ctg att gag caa aag tgg cct gga tct cag gac ctc gtg tca	816
Ser Glu Leu Ile Glu Gln Lys Trp Pro Gly Ser Gln Asp Leu Val Ser	
260 265 270	
aag att atg tcc aaa ccc gac caa ctt ctg ctg ctc ttg gat ggc ttt	864
Lys Ile Met Ser Lys Pro Asp Gln Leu Leu Leu Leu Leu Asp Gly Phe	
275 280 285	
gag gag ctc aca tct acc ctc att gac aga ctg gag gac ctg agt gaa	912
Glu Glu Leu Thr Ser Thr Leu Ile Asp Arg Leu Glu Asp Leu Ser Glu	
290 295 300	
gac tgg agg cag aaa ttg cct ggg tct gtc cta ctg agc agt ttg ctg	960
Asp Trp Arg Gln Lys Leu Pro Gly Ser Val Leu Leu Ser Ser Leu Leu	
305 310 315 320	
agc aaa acg atg ctt cca gag gcc acg cta ctg atc atg ata aga ttt	1008
Ser Lys Thr Met Leu Pro Glu Ala Thr Leu Leu Ile Met Ile Arg Phe	
325 330 335	
acc tct tgg cag aca tgc aag ccc ttg ctg aaa tgt ccc tct ctc gta	1056
Thr Ser Trp Gln Thr Cys Lys Pro Leu Leu Lys Cys Pro Ser Leu Val	
340 345 350	
acc ctt ccg ggg ttt aat acg atg gaa aaa atc aag tat ttc cag atg	1104
Thr Leu Pro Gly Phe Asn Thr Met Glu Lys Ile Lys Tyr Phe Gln Met	
355 360 365	
tat ttt gga cac aca gag gag gga gac caa gtc ttg agt ttc gcc atg	1152
Tyr Phe Gly His Thr Glu Glu Gly Asp Gln Val Leu Ser Phe Ala Met	
370 375 380	
gaa aac acc att ctc ttc tcc atg tgc cgg gtc cct gtg gtt tgc tgg	1200
Glu Asn Thr Ile Leu Phe Ser Met Cys Arg Val Pro Val Val Cys Trp	
385 390 395 400	

atg gtc tgc tct ggt ctg aaa cag caa atg gag aga gga aac aat ctc	1248
Met Val Cys Ser Gly Leu Lys Gln Gln Met Glu Arg Gly Asn Asn Leu	
405 410 415	
aca cag tca tgt cca aat gcc acc tct gtg ttc gtc cgg tat att tct	1296
Thr Gln Ser Cys Pro Asn Ala Thr Ser Val Phe Val Arg Tyr Ile Ser	
420 425 430	
agc ttg ttt ccc acc aga gct gag aac ttt tcc aga aag atc cac caa	1344
Ser Leu Phe Pro Thr Arg Ala Glu Asn Phe Ser Arg Lys Ile His Gln	
435 440 445	
gca caa ctg gaa ggt ctg tgt cac ttg gcc gca gac agc atg tgg cac	1392
Ala Gln Leu Glu Gly Leu Cys His Leu Ala Ala Asp Ser Met Trp His	
450 455 460	
agg aaa tgg gtg tta ggt aaa gaa gat ctt gag gaa gcc aag ctg gat	1440
Arg Lys Trp Val Leu Gly Lys Glu Asp Leu Glu Glu Ala Lys Leu Asp	
465 470 475 480	
cag acg gga gtc acc gcc ttc ctt ggc atg agt att ctt cgg aga att	1488
Gln Thr Gly Val Thr Ala Phe Leu Gly Met Ser Ile Leu Arg Arg Ile	
485 490 495	
gca ggt gag gaa gac cac tat gtc ttt acc ctc gtg act ttt cag gaa	1536
Ala Gly Glu Glu Asp His Tyr Val Phe Thr Leu Val Thr Phe Gln Glu	
500 505 510	
ttt ttt gcg gcc ttg ttt tat gtt ctc tgt ttc cca caa aga ctc aaa	1584
Phe Phe Ala Ala Leu Phe Tyr Val Leu Cys Phe Pro Gln Arg Leu Lys	
515 520 525	
aat ttt cat gtg ttg agc cac gtg aat atc cag cgc ctg ata gcg agt	1632
Asn Phe His Val Leu Ser His Val Asn Ile Gln Arg Leu Ile Ala Ser	
530 535 540	
ccc aga gga agc aaa agc tat ctc tct cac atg gga ctt ttc tta ttc	1680
Pro Arg Gly Ser Lys Ser Tyr Leu Ser His Met Gly Leu Phe Leu Phe	
545 550 555 560	
ggt ttt ctg aac gag gcc tgc gct tcg gcc gtg gaa cag tca ttc caa	1728
Gly Phe Leu Asn Glu Ala Cys Ala Ser Ala Val Glu Gln Ser Phe Gln	
565 570 575	
tgc aag gtg tct ttc ggt aat aag agg aaa ctg ctg aaa gtc ata cct	1776
Cys Lys Val Ser Phe Gly Asn Lys Arg Lys Leu Leu Lys Val Ile Pro	
580 585 590	
ctg ttg cat aaa tgt gac cca cct tct ccg ggc agt ggg gtc ccg cag	1824
Leu Leu His Lys Cys Asp Pro Pro Ser Pro Gly Ser Gly Val Pro Gln	
595 600 605	
tta ttc tac tgt ctg cat gaa atc cgg gag gaa gcc ttt gta agc caa	1872

Leu Phe Tyr Cys Leu His Glu Ile Arg Glu Glu Ala Phe Val Ser Gln
610 615 620

gcc cta aat gat tat cat aaa gtt gtc ttg aga att ggc aac aac aaa 1920
Ala Leu Asn Asp Tyr His Lys Val Val Leu Arg Ile Gly Asn Asn Lys
625 630 635 640

gaa gtt caa gtg tct gct ttt tgc ctg aag cgg tgt caa tat ttg cat 1968
Glu Val Gln Val Ser Ala Phe Cys Leu Lys Arg Cys Gln Tyr Leu His
645 650 655

gag gtg gaa ctg acc gtc acc ctg aac ttc atg aac gtg tgg aag ctc 2016
Glu Val Glu Leu Thr Val Thr Leu Asn Phe Met Asn Val Trp Lys Leu
660 665 670

agc tcc agc tcc cat cct ggc tct gag taa 2046
Ser Ser Ser Ser His Pro Gly Ser Glu
675 680

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<212> PRT
<213> Homo sapien

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Pro Gly Ser Pro Cys Glu Asn Gly Val Met Leu Tyr Met Arg Asn Val
35 40 45
Ser His Glu Glu Leu Gln Arg Phe Lys Gln Leu Leu Leu Thr Glu Leu
50 55 60
Ser Thr Gly Thr Met Pro Ile Thr Trp Asp Gln Val Glu Thr Ala Ser
65 70 75 80
Trp Ala Glu Val Val His Leu Leu Ile Glu Arg Phe Pro Gly Arg Arg
85 90 95
Ala Trp Asp Val Thr Ser Asn Ile Phe Ala Ile Met Asn Cys Asp Lys
100 105 110
Met Cys Val Val Val Arg Arg Glu Ile Asn Ala Ile Leu Pro Thr Leu
115 120 125
Glu Pro Glu Asp Leu Asn Val Gly Glu Thr Gln Val Asn Leu Glu Glu
130 135 140
Gly Glu Ser Gly Lys Ile Arg Arg Tyr Lys Ser Asn Val Met Glu Lys
145 150 155 160
Phe Phe Pro Ile Trp Asp Ile Thr Thr Trp Pro Gly Asn Gln Arg Asp
165 170 175
Phe Phe Tyr Gln Gly Val His Arg His Glu Glu Tyr Leu Pro Cys Leu
180 185 190
Leu Leu Pro Lys Arg Pro Gln Gly Arg Gln Pro Lys Thr Val Ala Ile
195 200 205
Gln Gly Ala Pro Gly Ile Gly Lys Thr Ile Leu Ala Lys Lys Val Met

210	215	220
Phe Glu Trp Ala Arg Asn Lys Phe Tyr Ala His Lys Arg Trp Cys Ala		
225	230	235
Phe Tyr Phe His Cys Gln Glu Val Asn Gln Thr Thr Asp Gln Ser Phe		240
	245	250
Ser Glu Leu Ile Glu Gln Lys Trp Pro Gly Ser Gln Asp Leu Val Ser		255
	260	265
Lys Ile Met Ser Lys Pro Asp Gln Leu Leu Leu Leu Leu Asp Gly Phe		270
	275	280
Glu Glu Leu Thr Ser Thr Leu Ile Asp Arg Leu Glu Asp Leu Ser Glu		285
	290	295
Asp Trp Arg Gln Lys Leu Pro Gly Ser Val Leu Leu Ser Ser Leu Leu		300
305	310	315
Ser Lys Thr Met Leu Pro Glu Ala Thr Leu Leu Ile Met Ile Arg Phe		320
	325	330
Thr Ser Trp Gln Thr Cys Lys Pro Leu Leu Lys Cys Pro Ser Leu Val		335
	340	345
Thr Leu Pro Gly Phe Asn Thr Met Glu Lys Ile Lys Tyr Phe Gln Met		350
	355	360
Tyr Phe Gly His Thr Glu Glu Gly Asp Gln Val Leu Ser Phe Ala Met		365
	370	375
Glu Asn Thr Ile Leu Phe Ser Met Cys Arg Val Pro Val Val Cys Trp		380
385	390	395
Met Val Cys Ser Gly Leu Lys Gln Gln Met Glu Arg Gly Asn Asn Leu		400
	405	410
Thr Gln Ser Cys Pro Asn Ala Thr Ser Val Phe Val Arg Tyr Ile Ser		415
	420	425
Ser Leu Phe Pro Thr Arg Ala Glu Asn Phe Ser Arg Lys Ile His Gln		430
	435	440
Ala Gln Leu Glu Gly Leu Cys His Leu Ala Ala Asp Ser Met Trp His		445
	450	455
Arg Lys Trp Val Leu Gly Lys Glu Asp Leu Glu Glu Ala Lys Leu Asp		460
465	470	475
Gln Thr Gly Val Thr Ala Phe Leu Gly Met Ser Ile Leu Arg Arg Ile		480
	485	490
Ala Gly Glu Glu Asp His Tyr Val Phe Thr Leu Val Thr Phe Gln Glu		495
	500	505
Phe Phe Ala Ala Leu Phe Tyr Val Leu Cys Phe Pro Gln Arg Leu Lys		510
	515	520
Asn Phe His Val Leu Ser His Val Asn Ile Gln Arg Leu Ile Ala Ser		525
	530	535
Pro Arg Gly Ser Lys Ser Tyr Leu Ser His Met Gly Leu Phe Leu Phe		540
545	550	555
Gly Phe Leu Asn Glu Ala Cys Ala Ser Ala Val Glu Gln Ser Phe Gln		560
	565	570
Cys Lys Val Ser Phe Gly Asn Lys Arg Lys Leu Leu Lys Val Ile Pro		575
	580	585
Leu Leu His Lys Cys Asp Pro Pro Ser Pro Gly Ser Gly Val Pro Gln		590
	595	600
Leu Phe Tyr Cys Leu His Glu Ile Arg Glu Glu Ala Phe Val Ser Gln		605
	610	615
Ala Leu Asn Asp Tyr His Lys Val Val Leu Arg Ile Gly Asn Asn Lys		620
625	630	635
		640

Glu	Val	Gln	Val	Ser	Ala	Phe	Cys	Leu	Lys	Arg	Cys	Gln	Tyr	Leu	His
				645					650					655	
Glu	Val	Glu	Leu	Thr	Val	Thr	Leu	Asn	Phe	Met	Asn	Val	Trp	Lys	Leu
			660					665					670		
Ser	Ser	Ser	Ser	His	Pro	Gly	Ser	Glu							
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 <211> 1515
 <212> DNA
 <213> Homo sapien

<220>
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<400> 21

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1 5 10 15	
ttg agt gac ctt gag gag aac gat ttc aag aag tta aag ttc tac tta	96
Leu Ser Asp Leu Glu Glu Asn Asp Phe Lys Lys Leu Lys Phe Tyr Leu	
20 25 30	
cgg gat atg acc ctg tct gag ggc cag ccc cca ctg gcc aga ggg gag	144
Arg Asp Met Thr Leu Ser Glu Gly Gln Pro Pro Leu Ala Arg Gly Glu	
35 40 45	
ttg gag ggc ctg att ccg gtg gac ctg gca gaa tta ctg att tca aag	192
Leu Glu Gly Leu Ile Pro Val Asp Leu Ala Glu Leu Leu Ile Ser Lys	
50 55 60	
tat gga gaa aag gag gct gtg aaa gtt gtc ctc aag ggc ttg aag gtc	240
Tyr Gly Glu Lys Glu Ala Val Lys Val Val Leu Lys Gly Leu Lys Val	
65 70 75 80	
atg aac ctg ttg gaa ctt gtg gac cag ctc agc cat att tgt ctg cat	288
Met Asn Leu Leu Glu Leu Val Asp Gln Leu Ser His Ile Cys Leu His	
85 90 95	
ggg gtc ggc tgg cac tgg aaa gac aac tct cgc cag aaa aag gtg ttg	336
Gly Val Gly Trp His Trp Lys Asp Asn Ser Arg Gln Lys Lys Val Leu	
100 105 110	
gac tgg gcc acc ggt act ctg tac cca ggc cgg ttt gat tat gtc ttt	384
Asp Trp Ala Thr Gly Thr Leu Tyr Pro Gly Arg Phe Asp Tyr Val Phe	
115 120 125	
tat gta agc tgc aaa gaa gtg gtc ctg ctg ctg gag agc aaa ctg gag	432
Tyr Val Ser Cys Lys Glu Val Val Leu Leu Leu Glu Ser Lys Leu Glu	
130 135 140	

cag ctc ctt ttc tgg tgc tgc ggg gac aat caa gcc cct gtc aca gag	480
Gln Leu Leu Phe Trp Cys Cys Gly Asp Asn Gln Ala Pro Val Thr Glu	
145 150 155 160	
att ctg agg cag cca gag cgg ctc ctg ttc atc ctg gat ggc ttt gat	528
Ile Leu Arg Gln Pro Glu Arg Leu Leu Phe Ile Leu Asp Gly Phe Asp	
165 170 175	
gag ctg cag agg ccc ttt gaa gaa aag ttg aag aag agg ggt ttg agt	576
Glu Leu Gln Arg Pro Phe Glu Glu Lys Leu Lys Lys Arg Gly Leu Ser	
180 185 190	
ccc aag gag agc ctg ctg cac ctt cta att agg aga cat aca ctc ccc	624
Pro Lys Glu Ser Leu Leu His Leu Leu Ile Arg Arg His Thr Leu Pro	
195 200 205	
acg tgc tcc ctt ctc atc acc acc cgg ccc ctg gct ttg agg aat ctg	672
Thr Cys Ser Leu Leu Ile Thr Thr Arg Pro Leu Ala Leu Arg Asn Leu	
210 215 220	
gag ccc ttg ctg aaa caa gca cgt cat gtc cat atc cta ggc ttc tct	720
Glu Pro Leu Leu Lys Gln Ala Arg His Val His Ile Leu Gly Phe Ser	
225 230 235 240	
gag gag gag agg gcg agg tac ttc agc tcc tat ttc acg gat gag aag	768
Glu Glu Glu Arg Ala Arg Tyr Phe Ser Ser Tyr Phe Thr Asp Glu Lys	
245 250 255	
caa gct gac cgt gcc ttc gac att gta cag aaa aat gac att ctc tac	816
Gln Ala Asp Arg Ala Phe Asp Ile Val Gln Lys Asn Asp Ile Leu Tyr	
260 265 270	
aaa gcg tgt cag gtt cca ggc att tgc tgg gtg gtc tgc tcc tgg ctg	864
Lys Ala Cys Gln Val Pro Gly Ile Cys Trp Val Val Cys Ser Trp Leu	
275 280 285	
cag ggg cag atg gag aga ggc aaa gtt gtc tta gag aca cct aga aac	912
Gln Gly Gln Met Glu Arg Gly Lys Val Val Leu Glu Thr Pro Arg Asn	
290 295 300	
agc act gac atc ttc atg gct tac gtc tcc acc ttt ctg ccg ccc gat	960
Ser Thr Asp Ile Phe Met Ala Tyr Val Ser Thr Phe Leu Pro Pro Asp	
305 310 315 320	
gat gat ggg ggc tgc tcc gag ctt tcc cgg cac agg gtc ctg agg agt	1008
Asp Asp Gly Gly Cys Ser Glu Leu Ser Arg His Arg Val Leu Arg Ser	
325 330 335	
ctg tgc tcc cta gca gct gaa ggg att cag cac cag agg ttc cta ttt	1056
Leu Cys Ser Leu Ala Ala Glu Gly Ile Gln His Gln Arg Phe Leu Phe	
340 345 350	

gaa gaa gct gag ctc agg aaa cat aat tta gat ggc ccc agg ctt gcc 1104
 Glu Glu Ala Glu Leu Arg Lys His Asn Leu Asp Gly Pro Arg Leu Ala
 355 360 365

gct ttc ctg agt agt aac gac tac caa ttg gga ctt gcc atc aag aag 1152
 Ala Phe Leu Ser Ser Asn Asp Tyr Gln Leu Gly Leu Ala Ile Lys Lys
 370 375 380

ttc tac agc ttc cgc cac atc agc ttc cag gac ttt ttt cat gcc atg 1200
 Phe Tyr Ser Phe Arg His Ile Ser Phe Gln Asp Phe Phe His Ala Met
 385 390 395 400

tct tac ctg gtg aaa gag gac caa agc cgg ctg ggg aag gag tcc cgc 1248
 Ser Tyr Leu Val Lys Glu Asp Gln Ser Arg Leu Gly Lys Glu Ser Arg
 405 410 415

aga gaa gtg caa agg ctg ctg gag gta aag gag cag gaa ggg aat gat 1296
 Arg Glu Val Gln Arg Leu Leu Glu Val Lys Glu Gln Glu Gly Asn Asp
 420 425 430

gag atg acc ctc act atg cag ttt tta ctg gac atc tcg aaa aaa gac 1344
 Glu Met Thr Leu Thr Met Gln Phe Leu Leu Asp Ile Ser Lys Lys Asp
 435 440 445

agc ttc tcg aac ttg gag ctc aag ttc tgc ttc aga att tct ccc tgt 1392
 Ser Phe Ser Asn Leu Glu Leu Lys Phe Cys Phe Arg Ile Ser Pro Cys
 450 455 460

tta gcg cag gat ctg aag cat ttt aaa gaa cag atg gaa tct atg aag 1440
 Leu Ala Gln Asp Leu Lys His Phe Lys Glu Gln Met Glu Ser Met Lys
 465 470 475 480

cac aac agg acc tgg gat ttg gaa ttc tcc ctg tat gaa gct aaa ata 1488
 His Asn Arg Thr Trp Asp Leu Glu Phe Ser Leu Tyr Glu Ala Lys Ile
 485 490 495

aag aat ctg gta aaa gta ttc aga tga 1515
 Lys Asn Leu Val Lys Val Phe Arg
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<210> 22
 <211> 504
 <212> PRT
 <213> Homo sapien

<400> 22
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 Leu Ser Asp Leu Glu Glu Asn Asp Phe Lys Lys Leu Lys Phe Tyr Leu
 20 25 30
 Arg Asp Met Thr Leu Ser Glu Gly Gln Pro Pro Leu Ala Arg Gly Glu
 35 40 45

Leu	Glu	Gly	Leu	Ile	Pro	Val	Asp	Leu	Ala	Glu	Leu	Leu	Ile	Ser	Lys
50						55				60					
Tyr	Gly	Glu	Lys	Glu	Ala	Val	Lys	Val	Val	Leu	Lys	Gly	Leu	Lys	Val
65					70					75					80
Met	Asn	Leu	Leu	Glu	Leu	Val	Asp	Gln	Leu	Ser	His	Ile	Cys	Leu	His
				85					90					95	
Gly	Val	Gly	Trp	His	Trp	Lys	Asp	Asn	Ser	Arg	Gln	Lys	Lys	Val	Leu
			100					105					110		
Asp	Trp	Ala	Thr	Gly	Thr	Leu	Tyr	Pro	Gly	Arg	Phe	Asp	Tyr	Val	Phe
		115					120					125			
Tyr	Val	Ser	Cys	Lys	Glu	Val	Val	Leu	Leu	Leu	Glu	Ser	Lys	Leu	Glu
		130				135					140				
Gln	Leu	Leu	Phe	Trp	Cys	Cys	Gly	Asp	Asn	Gln	Ala	Pro	Val	Thr	Glu
145					150					155					160
Ile	Leu	Arg	Gln	Pro	Glu	Arg	Leu	Leu	Phe	Ile	Leu	Asp	Gly	Phe	Asp
				165					170					175	
Glu	Leu	Gln	Arg	Pro	Phe	Glu	Glu	Lys	Leu	Lys	Lys	Arg	Gly	Leu	Ser
			180					185					190		
Pro	Lys	Glu	Ser	Leu	Leu	His	Leu	Leu	Ile	Arg	Arg	His	Thr	Leu	Pro
		195					200					205			
Thr	Cys	Ser	Leu	Leu	Ile	Thr	Thr	Arg	Pro	Leu	Ala	Leu	Arg	Asn	Leu
		210				215					220				
Glu	Pro	Leu	Leu	Lys	Gln	Ala	Arg	His	Val	His	Ile	Leu	Gly	Phe	Ser
225					230					235					240
Glu	Glu	Glu	Arg	Ala	Arg	Tyr	Phe	Ser	Ser	Tyr	Phe	Thr	Asp	Glu	Lys
				245					250					255	
Gln	Ala	Asp	Arg	Ala	Phe	Asp	Ile	Val	Gln	Lys	Asn	Asp	Ile	Leu	Tyr
			260					265					270		
Lys	Ala	Cys	Gln	Val	Pro	Gly	Ile	Cys	Trp	Val	Val	Cys	Ser	Trp	Leu
		275					280					285			
Gln	Gly	Gln	Met	Glu	Arg	Gly	Lys	Val	Val	Leu	Glu	Thr	Pro	Arg	Asn
		290				295				300					
Ser	Thr	Asp	Ile	Phe	Met	Ala	Tyr	Val	Ser	Thr	Phe	Leu	Pro	Pro	Asp
305					310					315					320
Asp	Asp	Gly	Gly	Cys	Ser	Glu	Leu	Ser	Arg	His	Arg	Val	Leu	Arg	Ser
				325					330				335		
Leu	Cys	Ser	Leu	Ala	Ala	Glu	Gly	Ile	Gln	His	Gln	Arg	Phe	Leu	Phe
			340					345					350		
Glu	Glu	Ala	Glu	Leu	Arg	Lys	His	Asn	Leu	Asp	Gly	Pro	Arg	Leu	Ala
		355					360					365			
Ala	Phe	Leu	Ser	Ser	Asn	Asp	Tyr	Gln	Leu	Gly	Leu	Ala	Ile	Lys	Lys
		370				375					380				
Phe	Tyr	Ser	Phe	Arg	His	Ile	Ser	Phe	Gln	Asp	Phe	Phe	His	Ala	Met
385					390					395					400
Ser	Tyr	Leu	Val	Lys	Glu	Asp	Gln	Ser	Arg	Leu	Gly	Lys	Glu	Ser	Arg
				405					410				415		
Arg	Glu	Val	Gln	Arg	Leu	Leu	Glu	Val	Lys	Glu	Gln	Glu	Gly	Asn	Asp
			420					425					430		
Glu	Met	Thr	Leu	Thr	Met	Gln	Phe	Leu	Leu	Asp	Ile	Ser	Lys	Lys	Asp
		435					440					445			
Ser	Phe	Ser	Asn	Leu	Glu	Leu	Lys	Phe	Cys	Phe	Arg	Ile	Ser	Pro	Cys
	450					455				460					
Leu	Ala	Gln	Asp	Leu	Lys	His	Phe	Lys	Glu	Gln	Met	Glu	Ser	Met	Lys

465 470 475 480
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 485 490 495
Lys Asn Leu Val Lys Val Phe Arg
 500

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<211> 3108
<212> DNA
<213> Homo sapien

<220>
<221> CDS
<222> (1)...(3105)

<400> 23
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Met Leu Arg Thr Ala Gly Arg Asp Gly Leu Cys Arg Leu Ser Thr Tyr
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ttg gaa gaa ctc gag gct gtg gaa ctg aag aag ttc aag tta tac ctg 96
Leu Glu Glu Leu Glu Ala Val Glu Leu Lys Lys Phe Lys Leu Tyr Leu
 20 25 30

ggg acc gcg aca gag ctg gga gaa ggc aag atc ccc tgg gga agc atg 144
Gly Thr Ala Thr Glu Leu Gly Glu Gly Lys Ile Pro Trp Gly Ser Met
 35 40 45

gag aag gcc ggt ccc ctg gaa atg gcc cag ctg ctc atc acc cac ttc 192
Glu Lys Ala Gly Pro Leu Glu Met Ala Gln Leu Leu Ile Thr His Phe
 50 55 60

ggg cca gag gag gcc tgg agg ttg gct ctc agc acc ttt gag cgg ata 240
Gly Pro Glu Glu Ala Trp Arg Leu Ala Leu Ser Thr Phe Glu Arg Ile
65 70 75 80

aac agg aag gac ctg tgg gag aga gga cag aga gag gac ctg gtg agg 288
Asn Arg Lys Asp Leu Trp Glu Arg Gly Gln Arg Glu Asp Leu Val Arg
 85 90 95

gat ccc cag gaa acc tac agg gac tat gtc cgc agg aaa ttc cgg ctc 336
Asp Pro Gln Glu Thr Tyr Arg Asp Tyr Val Arg Arg Lys Phe Arg Leu
 100 105 110

atg gaa gac cgc aat gcg cgc cta ggg gaa tgt gtc aac ctc agc cac 384
Met Glu Asp Arg Asn Ala Arg Leu Gly Glu Cys Val Asn Leu Ser His
 115 120 125

cgg tac acc cgg ctc ctg ctg gtg aag gag cac tca aac ccc atg cag 432
Arg Tyr Thr Arg Leu Leu Leu Val Lys Glu His Ser Asn Pro Met Gln
130 135 140

gtc cag cag cag ctt ctg gac aca ggc cgg gga cac gcg agg acc gtg	480
Val Gln Gln Gln Leu Leu Asp Thr Gly Arg Gly His Ala Arg Thr Val	
145 150 155 160	
gga cac cag gct agc ccc atc aag ata gag acc ctc ttt gag cca gac	528
Gly His Gln Ala Ser Pro Ile Lys Ile Glu Thr Leu Phe Glu Pro Asp	
165 170 175	
gag gag cgc ccc gag cca ccg cgc acc gtg gtc atg caa ggc gcg gca	576
Glu Glu Arg Pro Glu Pro Pro Arg Thr Val Val Met Gln Gly Ala Ala	
180 185 190	
ggg ata ggc aag tcc atg ctg gca cac aag gtg atg ctg gac tgg gcg	624
Gly Ile Gly Lys Ser Met Leu Ala His Lys Val Met Leu Asp Trp Ala	
195 200 205	
gac ggg aag ctc ttc caa ggc aga ttt gat tat ctc ttc tac atc aac	672
Asp Gly Lys Leu Phe Gln Gly Arg Phe Asp Tyr Leu Phe Tyr Ile Asn	
210 215 220	
tgc agg gag atg aac cag agt gcc acg gaa tgc agc atg caa gac ctc	720
Cys Arg Glu Met Asn Gln Ser Ala Thr Glu Cys Ser Met Gln Asp Leu	
225 230 235 240	
atc ttc agc tgc tgg cct gag ccc agc gcg cct ctc cag gag ctc atc	768
Ile Phe Ser Cys Trp Pro Glu Pro Ser Ala Pro Leu Gln Glu Leu Ile	
245 250 255	
cga gtt ccc gag cgc ctc ctt ttc atc atc gac ggc ttc gat gag ctc	816
Arg Val Pro Glu Arg Leu Leu Phe Ile Ile Asp Gly Phe Asp Glu Leu	
260 265 270	
aag cct tct ttc cac gat cct cag gga ccc tgg tgc ctc tgc tgg gag	864
Lys Pro Ser Phe His Asp Pro Gln Gly Pro Trp Cys Leu Cys Trp Glu	
275 280 285	
gag aaa cgg ccc acg gag ctg ctt ctt aac agc tta att cgg aag aag	912
Glu Lys Arg Pro Thr Glu Leu Leu Leu Asn Ser Leu Ile Arg Lys Lys	
290 295 300	
ctg ctc cct gag cta tct ttg ctc atc acc aca cgg ccc acg gct ttg	960
Leu Leu Pro Glu Leu Ser Leu Leu Ile Thr Thr Arg Pro Thr Ala Leu	
305 310 315 320	
gag aag ctc cac cgt ctg ctg gag cac ccc agg cat gtg gag atc ctg	1008
Glu Lys Leu His Arg Leu Leu Glu His Pro Arg His Val Glu Ile Leu	
325 330 335	
ggc ttc tct gag gca gaa agg aag gaa tac ttc tac aag tat ttc cac	1056
Gly Phe Ser Glu Ala Glu Arg Lys Glu Tyr Phe Tyr Lys Tyr Phe His	
340 345 350	
aat gca gag cag gcg ggc caa gtc ttc aat tac gtg agg gac aac gag	1104

Asn	Ala	Glu	Gln	Ala	Gly	Gln	Val	Phe	Asn	Tyr	Val	Arg	Asp	Asn	Glu		
	355						360					365					
cct	ctc	ttc	acc	atg	tgc	ttc	gtc	ccc	ctg	gtg	tgc	tgg	gtg	gtg	tgt	1152	
Pro	Leu	Phe	Thr	Met	Cys	Phe	Val	Pro	Leu	Val	Cys	Trp	Val	Val	Cys		
	370					375					380						
acc	tgc	ctc	cag	cag	cag	ctg	gag	ggg	ggg	ggg	ctg	ttg	aga	cag	acg	1200	
Thr	Cys	Leu	Gln	Gln	Gln	Leu	Glu	Gly	Gly	Gly	Leu	Leu	Arg	Gln	Thr		
	385					390				395					400		
tcc	agg	acc	acc	act	gca	gtg	tac	atg	ctc	tac	ctg	ctg	agt	ctg	atg	1248	
Ser	Arg	Thr	Thr	Thr	Ala	Val	Tyr	Met	Leu	Tyr	Leu	Leu	Ser	Leu	Met		
				405					410					415			
caa	ccc	aag	ccg	ggg	gcc	ccg	cgc	ctc	cag	ccc	cca	ccc	aac	cag	aga	1296	
Gln	Pro	Lys	Pro	Gly	Ala	Pro	Arg	Leu	Gln	Pro	Pro	Pro	Asn	Gln	Arg		
			420					425					430				
ggg	ttg	tgc	tcc	ttg	gcg	gca	gat	ggg	ctc	tgg	aat	cag	aaa	atc	cta	1344	
Gly	Leu	Cys	Ser	Leu	Ala	Ala	Asp	Gly	Leu	Trp	Asn	Gln	Lys	Ile	Leu		
	435						440					445					
ttt	gag	gag	cag	gac	ctc	cgg	aag	cac	ggc	cta	gac	ggg	gaa	gac	gtc	1392	
Phe	Glu	Glu	Gln	Asp	Leu	Arg	Lys	His	Gly	Leu	Asp	Gly	Glu	Asp	Val		
	450					455				460							
tct	gcc	ttc	ctc	aac	atg	aac	atc	ttc	cag	aag	gac	atc	aac	tgt	gag	1440	
Ser	Ala	Phe	Leu	Asn	Met	Asn	Ile	Phe	Gln	Lys	Asp	Ile	Asn	Cys	Glu		
	465				470				475					480			
agg	tac	tac	agc	ttc	atc	cac	ttg	agt	ttc	cag	gaa	ttc	ttt	gca	gct	1488	
Arg	Tyr	Tyr	Ser	Phe	Ile	His	Leu	Ser	Phe	Gln	Glu	Phe	Phe	Ala	Ala		
			485					490						495			
atg	tac	tat	atc	ctg	gac	gag	ggg	gag	ggc	ggg	gca	ggc	cca	gac	cag	1536	
Met	Tyr	Tyr	Ile	Leu	Asp	Glu	Gly	Glu	Gly	Gly	Ala	Gly	Pro	Asp	Gln		
			500					505					510				
gac	gtg	acc	agg	ctg	ttg	acc	gag	tac	gcg	ttt	tct	gaa	agg	agc	ttc	1584	
Asp	Val	Thr	Arg	Leu	Leu	Thr	Glu	Tyr	Ala	Phe	Ser	Glu	Arg	Ser	Phe		
		515					520					525					
ctg	gca	ctc	acc	agc	cgc	ttc	ctg	ttt	gga	ctc	ctg	aac	gag	gag	acc	1632	
Leu	Ala	Leu	Thr	Ser	Arg	Phe	Leu	Phe	Gly	Leu	Leu	Asn	Glu	Glu	Thr		
	530					535						540					
agg	agc	cac	ctg	gag	aag	agt	ctc	tgc	tgg	aag	gtc	tcg	ccg	cac	atc	1680	
Arg	Ser	His	Leu	Glu	Lys	Ser	Leu	Cys	Trp	Lys	Val	Ser	Pro	His	Ile		
	545				550				555					560			
aag	atg	gac	ctg	ttg	cag	tgg	atc	caa	agc	aaa	gct	cag	agc	gac	ggc	1728	
Lys	Met	Asp	Leu	Leu	Gln	Trp	Ile	Gln	Ser	Lys	Ala	Gln	Ser	Asp	Gly		

565	570	575	
tcc acc ctg cag cag ggc tcc ttg gag ttc ttc agc tgc ttg tac gag			1776
Ser Thr Leu Gln Gln Gly Ser Leu Glu Phe Phe Ser Cys Leu Tyr Glu			
580	585	590	
atc cag gag gag gag ttt atc cag cag gcc ctg agc cac ttc cag gtg			1824
Ile Gln Glu Glu Glu Phe Ile Gln Gln Ala Leu Ser His Phe Gln Val			
595	600	605	
atc gtg gtc agc aac att gcc tcc aag atg gag cac atg gtc tcc tcg			1872
Ile Val Val Ser Asn Ile Ala Ser Lys Met Glu His Met Val Ser Ser			
610	615	620	
ttc tgt ctg aag cgc tgc agg agc gcc cag gtg ctg cac ttg tat ggc			1920
Phe Cys Leu Lys Arg Cys Arg Ser Ala Gln Val Leu His Leu Tyr Gly			
625	630	635	640
gcc acc tac agc gcg gac ggg gaa gac cgc gcg agg tgc tcc gca gga			1968
Ala Thr Tyr Ser Ala Asp Gly Glu Asp Arg Ala Arg Cys Ser Ala Gly			
645	650	655	
gcg cac acg ctg ttg gtg cag ctc aga cca gag agg acc gtt ctg ctg			2016
Ala His Thr Leu Leu Val Gln Leu Arg Pro Glu Arg Thr Val Leu Leu			
660	665	670	
gac gcc tac agt gaa cat ctg gca gcg gcc ctg tgc acc aat cca aac			2064
Asp Ala Tyr Ser Glu His Leu Ala Ala Ala Leu Cys Thr Asn Pro Asn			
675	680	685	
ctg ata gag ctg tct ctg tac cga aat gcc ctg ggc agc cgg ggg gtg			2112
Leu Ile Glu Leu Ser Leu Tyr Arg Asn Ala Leu Gly Ser Arg Gly Val			
690	695	700	
aag ctg ctc tgt caa gga ctc aga cac ccc aac tgc aaa ctt cag aac			2160
Lys Leu Leu Cys Gln Gly Leu Arg His Pro Asn Cys Lys Leu Gln Asn			
705	710	715	720
ctg agg ctg aag agg tgc cgc atc tcc agc tca gcc tgc gag gac ctc			2208
Leu Arg Leu Lys Arg Cys Arg Ile Ser Ser Ser Ala Cys Glu Asp Leu			
725	730	735	
tct gca gct ctc ata gcc aat aag aat ttg aca agg atg gat ctc agt			2256
Ser Ala Ala Leu Ile Ala Asn Lys Asn Leu Thr Arg Met Asp Leu Ser			
740	745	750	
ggc aac ggc gtt gga ttc cca ggc atg atg ctg ctt tgc gag ggc ctg			2304
Gly Asn Gly Val Gly Phe Pro Gly Met Met Leu Leu Cys Glu Gly Leu			
755	760	765	
cgg cat ccc cag tgc agg ctg cag atg att cag ttg agg aag tgt cag			2352
Arg His Pro Gln Cys Arg Leu Gln Met Ile Gln Leu Arg Lys Cys Gln			
770	775	780	

ctg gag tcc ggg gct tgt cag gag atg gct tct gtg ctc ggc acc aac	2400
Leu Glu Ser Gly Ala Cys Gln Glu Met Ala Ser Val Leu Gly Thr Asn	
785 790 795 800	
cca cat ctg gtt gag ttg gac ctg aca gga aat gca ctg gag gat ttg	2448
Pro His Leu Val Glu Leu Asp Leu Thr Gly Asn Ala Leu Glu Asp Leu	
805 810 815	
ggc ctg agg tta cta tgc cag gga ctg agg cac cca gtc tgc aga cta	2496
Gly Leu Arg Leu Leu Cys Gln Gly Leu Arg His Pro Val Cys Arg Leu	
820 825 830	
cgg act ttg tgg ctg aag atc tgc cgc ctc act gct gct gcc tgt gac	2544
Arg Thr Leu Trp Leu Lys Ile Cys Arg Leu Thr Ala Ala Ala Cys Asp	
835 840 845	
gag ctg gcc tca act ctc agt gtg aac cag agc ctg aga gag ctg gac	2592
Glu Leu Ala Ser Thr Leu Ser Val Asn Gln Ser Leu Arg Glu Leu Asp	
850 855 860	
ctg agc ctg aat gag ctg ggg gac ctc ggg gtg ctg ctg ctg tgt gag	2640
Leu Ser Leu Asn Glu Leu Gly Asp Leu Gly Val Leu Leu Leu Cys Glu	
865 870 875 880	
ggc ctc agg cat ccc acg tgc aag ctc cag acc ctg cgg ttg ggc atc	2688
Gly Leu Arg His Pro Thr Cys Lys Leu Gln Thr Leu Arg Leu Gly Ile	
885 890 895	
tgc cgg ctg ggc tct gcc gcc tgt gag ggt ctt tct gtg gtg ctc cag	2736
Cys Arg Leu Gly Ser Ala Ala Cys Glu Gly Leu Ser Val Val Leu Gln	
900 905 910	
gcc aac cac aac ctc cgg gag ctg gac ttg agt ttc aac gac ctg gga	2784
Ala Asn His Asn Leu Arg Glu Leu Asp Leu Ser Phe Asn Asp Leu Gly	
915 920 925	
gac tgg ggc ctg tgg ttg ctg gct gag ggg ctg caa cat ccc gcc tgc	2832
Asp Trp Gly Leu Trp Leu Leu Ala Glu Gly Leu Gln His Pro Ala Cys	
930 935 940	
aga ctc cag aaa ctg tgg ctg gat agc tgt ggc ctc aca gcc aag gct	2880
Arg Leu Gln Lys Leu Trp Leu Asp Ser Cys Gly Leu Thr Ala Lys Ala	
945 950 955 960	
tgt gag aat ctt tac ttc acc ctg ggg atc aac cag acc ttg acc gac	2928
Cys Glu Asn Leu Tyr Phe Thr Leu Gly Ile Asn Gln Thr Leu Thr Asp	
965 970 975	
ctt tac ctg acc aac aac gcc cta ggg gac aca ggt gtc cga ctg ctt	2976
Leu Tyr Leu Thr Asn Asn Ala Leu Gly Asp Thr Gly Val Arg Leu Leu	
980 985 990	

tgc aag cgg ctg agc cat cct ggc tgc aaa ctc cga gtc ctc tgg tta 3024
Cys Lys Arg Leu Ser His Pro Gly Cys Lys Leu Arg Val Leu Trp Leu
995 1000 1005

ttt ggg atg gac ctg aat aaa atg acc cac agt agg ttg gca gcg ctt 3072
Phe Gly Met Asp Leu Asn Lys Met Thr His Ser Arg Leu Ala Ala Leu
1010 1015 1020

cga gta aca aaa cct tat ttg gac att ggc tgc tga 3108
Arg Val Thr Lys Pro Tyr Leu Asp Ile Gly Cys
1025 1030 1035

<210> 24
<211> 1035
<212> PRT
<213> Homo sapien

<400> 24
Met Leu Arg Thr Ala Gly Arg Asp Gly Leu Cys Arg Leu Ser Thr Tyr
1 5 10 15
Leu Glu Glu Leu Glu Ala Val Glu Leu Lys Lys Phe Lys Leu Tyr Leu
20 25 30
Gly Thr Ala Thr Glu Leu Gly Glu Gly Lys Ile Pro Trp Gly Ser Met
35 40 45
Glu Lys Ala Gly Pro Leu Glu Met Ala Gln Leu Leu Ile Thr His Phe
50 55 60
Gly Pro Glu Glu Ala Trp Arg Leu Ala Leu Ser Thr Phe Glu Arg Ile
65 70 75 80
Asn Arg Lys Asp Leu Trp Glu Arg Gly Gln Arg Glu Asp Leu Val Arg
85 90 95
Asp Pro Gln Glu Thr Tyr Arg Asp Tyr Val Arg Arg Lys Phe Arg Leu
100 105 110
Met Glu Asp Arg Asn Ala Arg Leu Gly Glu Cys Val Asn Leu Ser His
115 120 125
Arg Tyr Thr Arg Leu Leu Leu Val Lys Glu His Ser Asn Pro Met Gln
130 135 140
Val Gln Gln Gln Leu Leu Asp Thr Gly Arg Gly His Ala Arg Thr Val
145 150 155 160
Gly His Gln Ala Ser Pro Ile Lys Ile Glu Thr Leu Phe Glu Pro Asp
165 170 175
Glu Glu Arg Pro Glu Pro Pro Arg Thr Val Val Met Gln Gly Ala Ala
180 185 190
Gly Ile Gly Lys Ser Met Leu Ala His Lys Val Met Leu Asp Trp Ala
195 200 205
Asp Gly Lys Leu Phe Gln Gly Arg Phe Asp Tyr Leu Phe Tyr Ile Asn
210 215 220
Cys Arg Glu Met Asn Gln Ser Ala Thr Glu Cys Ser Met Gln Asp Leu
225 230 235 240
Ile Phe Ser Cys Trp Pro Glu Pro Ser Ala Pro Leu Gln Glu Leu Ile
245 250 255
Arg Val Pro Glu Arg Leu Leu Phe Ile Ile Asp Gly Phe Asp Glu Leu
260 265 270

Lys	Pro	Ser	Phe	His	Asp	Pro	Gln	Gly	Pro	Trp	Cys	Leu	Cys	Trp	Glu
		275					280					285			
Glu	Lys	Arg	Pro	Thr	Glu	Leu	Leu	Leu	Asn	Ser	Leu	Ile	Arg	Lys	Lys
		290				295					300				
Leu	Leu	Pro	Glu	Leu	Ser	Leu	Leu	Ile	Thr	Thr	Arg	Pro	Thr	Ala	Leu
305					310					315					320
Glu	Lys	Leu	His	Arg	Leu	Leu	Glu	His	Pro	Arg	His	Val	Glu	Ile	Leu
				325					330					335	
Gly	Phe	Ser	Glu	Ala	Glu	Arg	Lys	Glu	Tyr	Phe	Tyr	Lys	Tyr	Phe	His
			340					345					350		
Asn	Ala	Glu	Gln	Ala	Gly	Gln	Val	Phe	Asn	Tyr	Val	Arg	Asp	Asn	Glu
		355					360					365			
Pro	Leu	Phe	Thr	Met	Cys	Phe	Val	Pro	Leu	Val	Cys	Trp	Val	Val	Cys
		370				375					380				
Thr	Cys	Leu	Gln	Gln	Gln	Leu	Glu	Gly	Gly	Gly	Leu	Leu	Arg	Gln	Thr
385					390					395					400
Ser	Arg	Thr	Thr	Thr	Ala	Val	Tyr	Met	Leu	Tyr	Leu	Leu	Ser	Leu	Met
				405					410					415	
Gln	Pro	Lys	Pro	Gly	Ala	Pro	Arg	Leu	Gln	Pro	Pro	Pro	Asn	Gln	Arg
			420					425					430		
Gly	Leu	Cys	Ser	Leu	Ala	Ala	Asp	Gly	Leu	Trp	Asn	Gln	Lys	Ile	Leu
		435					440					445			
Phe	Glu	Glu	Gln	Asp	Leu	Arg	Lys	His	Gly	Leu	Asp	Gly	Glu	Asp	Val
		450				455					460				
Ser	Ala	Phe	Leu	Asn	Met	Asn	Ile	Phe	Gln	Lys	Asp	Ile	Asn	Cys	Glu
465					470					475					480
Arg	Tyr	Tyr	Ser	Phe	Ile	His	Leu	Ser	Phe	Gln	Glu	Phe	Phe	Ala	Ala
				485					490					495	
Met	Tyr	Tyr	Ile	Leu	Asp	Glu	Gly	Glu	Gly	Gly	Ala	Gly	Pro	Asp	Gln
			500				505						510		
Asp	Val	Thr	Arg	Leu	Leu	Thr	Glu	Tyr	Ala	Phe	Ser	Glu	Arg	Ser	Phe
		515					520					525			
Leu	Ala	Leu	Thr	Ser	Arg	Phe	Leu	Phe	Gly	Leu	Leu	Asn	Glu	Glu	Thr
		530				535					540				
Arg	Ser	His	Leu	Glu	Lys	Ser	Leu	Cys	Trp	Lys	Val	Ser	Pro	His	Ile
545					550					555					560
Lys	Met	Asp	Leu	Leu	Gln	Trp	Ile	Gln	Ser	Lys	Ala	Gln	Ser	Asp	Gly
				565					570					575	
Ser	Thr	Leu	Gln	Gln	Gly	Ser	Leu	Glu	Phe	Phe	Ser	Cys	Leu	Tyr	Glu
			580					585					590		
Ile	Gln	Glu	Glu	Glu	Phe	Ile	Gln	Gln	Ala	Leu	Ser	His	Phe	Gln	Val
		595					600					605			
Ile	Val	Val	Ser	Asn	Ile	Ala	Ser	Lys	Met	Glu	His	Met	Val	Ser	Ser
		610				615					620				
Phe	Cys	Leu													

690		695		700
Lys Leu Leu Cys Gln Gly Leu Arg His Pro Asn Cys Lys Leu Gln Asn				
705		710		715
Leu Arg Leu Lys Arg Cys Arg Ile Ser Ser Ser Ala Cys Glu Asp Leu				
	725		730	735
Ser Ala Ala Leu Ile Ala Asn Lys Asn Leu Thr Arg Met Asp Leu Ser				
	740		745	750
Gly Asn Gly Val Gly Phe Pro Gly Met Met Leu Leu Cys Glu Gly Leu				
	755		760	765
Arg His Pro Gln Cys Arg Leu Gln Met Ile Gln Leu Arg Lys Cys Gln				
	770		775	780
Leu Glu Ser Gly Ala Cys Gln Glu Met Ala Ser Val Leu Gly Thr Asn				
785		790		795
Pro His Leu Val Glu Leu Asp Leu Thr Gly Asn Ala Leu Glu Asp Leu				
	805		810	815
Gly Leu Arg Leu Leu Cys Gln Gly Leu Arg His Pro Val Cys Arg Leu				
	820		825	830
Arg Thr Leu Trp Leu Lys Ile Cys Arg Leu Thr Ala Ala Cys Asp				
	835		840	845
Glu Leu Ala Ser Thr Leu Ser Val Asn Gln Ser Leu Arg Glu Leu Asp				
	850		855	860
Leu Ser Leu Asn Glu Leu Gly Asp Leu Gly Val Leu Leu Leu Cys Glu				
865		870		875
Gly Leu Arg His Pro Thr Cys Lys Leu Gln Thr Leu Arg Leu Gly Ile				
	885		890	895
Cys Arg Leu Gly Ser Ala Ala Cys Glu Gly Leu Ser Val Val Leu Gln				
	900		905	910
Ala Asn His Asn Leu Arg Glu Leu Asp Leu Ser Phe Asn Asp Leu Gly				
	915		920	925
Asp Trp Gly Leu Trp Leu Leu Ala Glu Gly Leu Gln His Pro Ala Cys				
	930		935	940
Arg Leu Gln Lys Leu Trp Leu Asp Ser Cys Gly Leu Thr Ala Lys Ala				
945		950		955
Cys Glu Asn Leu Tyr Phe Thr Leu Gly Ile Asn Gln Thr Leu Thr Asp				
	965		970	975
Leu Tyr Leu Thr Asn Asn Ala Leu Gly Asp Thr Gly Val Arg Leu Leu				
	980		985	990
Cys Lys Arg Leu Ser His Pro Gly Cys Lys Leu Arg Val Leu Trp Leu				
	995		1000	1005
Phe Gly Met Asp Leu Asn Lys Met Thr His Ser Arg Leu Ala Ala Leu				
	1010		1015	1020
Arg Val Thr Lys Pro Tyr Leu Asp Ile Gly Cys				
1025		1030		1035

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 <212> DNA
 <213> Homo sapien

<220>
 <221> CDS
 <222> (1) ... (243)

<400> 25

atg gca agc acc cgc tgc aag ctg gcc agg tac ctg gag gac ctg gag	48
Met Ala Ser Thr Arg Cys Lys Leu Ala Arg Tyr Leu Glu Asp Leu Glu	
1 5 10 15	

gat gtg gac ttg aag aaa ttt aag atg cac tta gag gac tat cct ccc	96
Asp Val Asp Leu Lys Lys Phe Lys Met His Leu Glu Asp Tyr Pro Pro	
20 25 30	

cag aag ggc tgc atc ccc ctc ccg agg ggt cag aca gag aag gca gac	144
Gln Lys Gly Cys Ile Pro Leu Pro Arg Gly Gln Thr Glu Lys Ala Asp	
35 40 45	

cat gtg gat cta gcc acg cta atg atc gac ttc aat ggg gag gag aag	192
His Val Asp Leu Ala Thr Leu Met Ile Asp Phe Asn Gly Glu Glu Lys	
50 55 60	

gcg tgg gcc atg gtc gtg tgg atc ttc gct gcg atc aac agg aga gac	240
Ala Trp Ala Met Val Val Trp Ile Phe Ala Ala Ile Asn Arg Arg Asp	
65 70 75 80	

ctt	243
Leu	

<210> 26

<211> 81

<212> PRT

<213> Homo sapien

<400> 26

Met Ala Ser Thr Arg Cys Lys Leu Ala Arg Tyr Leu Glu Asp Leu Glu	
1 5 10 15	

Asp Val Asp Leu Lys Lys Phe Lys Met His Leu Glu Asp Tyr Pro Pro	
20 25 30	

Gln Lys Gly Cys Ile Pro Leu Pro Arg Gly Gln Thr Glu Lys Ala Asp	
35 40 45	

His Val Asp Leu Ala Thr Leu Met Ile Asp Phe Asn Gly Glu Glu Lys	
50 55 60	

Ala Trp Ala Met Val Val Trp Ile Phe Ala Ala Ile Asn Arg Arg Asp	
65 70 75 80	

Leu

<210> 27

<211> 270

<212> DNA

<213> Homo sapien

<220>

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<222> (1)...(267)

<400> 27

atg gga acg aag cgc gag gcc atc ctg aag gtg ctg gag aac ctg aca 48
Met Gly Thr Lys Arg Glu Ala Ile Leu Lys Val Leu Glu Asn Leu Thr

1 5 10 15

ccg gag gag ctc aag aag ttc aag atg aag ctg ggg acg gtg ccg ctg 96
Pro Glu Glu Leu Lys Lys Phe Lys Met Lys Leu Gly Thr Val Pro Leu

20 25 30

cgc gag ggc ttt gag cgc atc ccg cgg ggc gcg ctc ggg cag cta gat 144
Arg Glu Gly Phe Glu Arg Ile Pro Arg Gly Ala Leu Gly Gln Leu Asp

35 40 45

atc gtg gac ctc acc gac aag ctg gtc gcc tcc tac tac gag gac tac 192
Ile Val Asp Leu Thr Asp Lys Leu Val Ala Ser Tyr Tyr Glu Asp Tyr

50 55 60

gca gcc gag ctc gtc gtg gcc gtg ctg cgc gac atg cgc atg ttg gag 240
Ala Ala Glu Leu Val Val Ala Val Leu Arg Asp Met Arg Met Leu Glu

65 70 75 80

gag gcc gca cgg ctg cag cgg gct gcg tga 270
Glu Ala Ala Arg Leu Gln Arg Ala Ala

85

<210> 28

<211> 89

<212> PRT

<213> Homo sapien

<400> 28

Met Gly Thr Lys Arg Glu Ala Ile Leu Lys Val Leu Glu Asn Leu Thr
1 5 10 15

Pro Glu Glu Leu Lys Lys Phe Lys Met Lys Leu Gly Thr Val Pro Leu
20 25 30

Arg Glu Gly Phe Glu Arg Ile Pro Arg Gly Ala Leu Gly Gln Leu Asp
35 40 45

Ile Val Asp Leu Thr Asp Lys Leu Val Ala Ser Tyr Tyr Glu Asp Tyr
50 55 60

Ala Ala Glu Leu Val Val Ala Val Leu Arg Asp Met Arg Met Leu Glu
65 70 75 80

Glu Ala Ala Arg Leu Gln Arg Ala Ala

85

<210> 29

<211> 6

<212> PRT

<213> Homo sapien

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<222> (4)...(5)
<223> Xaa=any amino acid

<221> VARIANT
<222> 4, 5
<223> Xaa = Any Amino Acid

<400> 29
Lys Phe Lys Xaa Xaa Leu
1 5

<210> 30
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<223> Xaa=any amino acid

<221> VARIANT
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<223> Xaa = Any Amino Acid

<400> 30
Lys Leu Lys Xaa Xaa Leu
1 5

<210> 31
<211> 6
<212> PRT
<213> Homo sapien

<220>
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<223> Xaa=any amino acid

<221> VARIANT
<222> 4, 5
<223> Xaa = Any Amino Acid

<400> 31
Arg Phe Arg Xaa Xaa Leu
1 5

<210> 32
<211> 6
<212> PRT
<213> Homo sapien

<220>
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<223> Xaa=any amino acid

<221> VARIANT
<222> 4, 5
<223> Xaa = Any Amino Acid

<400> 32
Arg Phe Lys Xaa Xaa Leu
1 5

<210> 33
<211> 6
<212> PRT
<213> Homo sapien

<220>
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<222> (4)...(5)
<223> Xaa=any amino acid

<221> VARIANT
<222> 4, 5
<223> Xaa = Any Amino Acid

<400> 33
Lys Phe Arg Xaa Xaa Leu
1 5

<210> 34
<211> 6
<212> PRT
<213> Homo sapien

<220>
<221> VARIANT
<222> (4)...(5)
<223> Xaa=any amino acid

<221> VARIANT
<222> 4, 5
<223> Xaa = Any Amino Acid

<400> 34

Lys Phe Lys Xaa Xaa Ile

1 5

<210> 35

<211> 39

<212> DNA

<213> Artificial Sequence

<220>

<223> synthetic primer

<400> 35

ccggaattca ccattggcagc ctctttcttc tctgatttt

39

<210> 36

<211> 41

<212> DNA

<213> Artificial Sequence

<220>

<223> synthetic primer

<400> 36

ccgctcgagt cacgtagagc tgtgttcac cttttctta a

41

<210> 37

<211> 319

<212> PRT

<213> Homo sapiens

<400> 37

Gln	Pro	Arg	Thr	Val	Ile	Ile	Gln	Gly	Pro	Gln	Gly	Ile	Gly	Lys	Thr
1				5				10					15		
Thr	Leu	Leu	Met	Lys	Leu	Met	Met	Ala	Trp	Ser	Asp	Asn	Lys	Ile	Phe
			20					25					30		
Arg	Asp	Arg	Phe	Leu	Tyr	Thr	Phe	Tyr	Phe	Cys	Cys	Arg	Glu	Leu	Arg
		35				40					45				
Glu	Leu	Pro	Pro	Thr	Ser	Leu	Ala	Asp	Leu	Ile	Ser	Arg	Glu	Trp	Pro
	50					55					60				
Asp	Pro	Ala	Ala	Pro	Ile	Thr	Glu	Ile	Val	Ser	Gln	Pro	Glu	Arg	Leu
65					70				75				80		
Leu	Phe	Val	Ile	Asp	Ser	Phe	Glu	Glu	Leu	Gln	Gly	Gly	Leu	Asn	Glu
			85					90					95		
Pro	Asp	Ser	Asp	Leu	Cys	Gly	Asp	Leu	Met	Glu	Lys	Arg	Pro	Val	Gln
			100					105					110		
Val	Leu	Leu	Ser	Ser	Leu	Leu	Arg	Lys	Lys	Met	Leu	Pro	Glu	Ala	Ser
		115					120					125			
Leu	Leu	Ile	Ala	Ile	Lys	Pro	Val	Cys	Pro	Lys	Glu	Leu	Arg	Asp	Gln
	130					135					140				
Val	Thr	Ile	Ser	Glu	Ile	Tyr	Gln	Pro	Arg	Gly	Phe	Asn	Glu	Ser	Asp
145					150					155			160		
Arg	Leu	Val	Tyr	Phe	Cys	Cys	Phe	Phe	Lys	Asp	Pro	Lys	Arg	Ala	Met

				165					170					175			
Glu	Ala	Phe	Asn	Leu	Val	Arg	Glu	Ser	Glu	Gln	Leu	Phe	Ser	Ile	Cys		
			180					185					190				
Gln	Ile	Pro	Leu	Leu	Cys	Trp	Ile	Leu	Cys	Thr	Ser	Leu	Lys	Gln	Glu		
		195					200					205					
Met	Gln	Lys	Gly	Lys	Asp	Leu	Ala	Leu	Thr	Cys	Gln	Ser	Thr	Thr	Ser		
	210					215					220						
Val	Tyr	Ser	Ser	Phe	Val	Phe	Asn	Leu	Phe	Thr	Pro	Glu	Gly	Ala	Glu		
225					230					235					240		
Gly	Pro	Thr	Pro	Gln	Thr	Gln	His	Gln	Leu	Lys	Ala	Leu	Cys	Ser	Leu		
			245					250						255			
Ala	Ala	Glu	Gly	Met	Trp	Thr	Asp	Thr	Phe	Glu	Phe	Cys	Glu	Asp	Asp		
		260					265					270					
Leu	Arg	Arg	Asn	Gly	Val	Val	Asp	Ala	Asp	Ile	Pro	Ala	Leu	Leu	Gly		
	275						280				285						
Thr	Lys	Ile	Leu	Leu	Lys	Tyr	Gly	Glu	Arg	Glu	Ser	Ser	Tyr	Val	Phe		
	290					295				300							
Leu	His	Val	Cys	Ile	Gln	Glu	Phe	Cys	Ala	Ala	Leu	Phe	Tyr	Leu			
305					310					315							

<210> 38
 <211> 270
 <212> PRT
 <213> Homo sapiens

<400> 38

Ser	Ile	Cys	Gln	Ile	Pro	Leu	Leu	Cys	Trp	Ile	Leu	Cys	Thr	Ser	Leu		
1				5					10					15			
Lys	Gln	Glu	Met	Gln	Lys	Gly	Lys	Asp	Leu	Ala	Leu	Thr	Cys	Gln	Ser		
		20					25					30					
Thr	Thr	Ser	Val	Tyr	Ser	Ser	Phe	Val	Phe	Asn	Leu	Phe	Thr	Pro	Glu		
	35					40					45						
Gly	Ala	Glu	Gly	Pro	Thr	Pro	Gln	Thr	Gln	His	Gln	Leu	Lys	Ala	Leu		
	50				55					60							
Cys	Ser	Leu	Ala	Ala	Glu	Gly	Met	Trp	Thr	Asp	Thr	Phe	Glu	Phe	Cys		
65				70					75					80			
Glu	Asp	Asp	Leu	Arg	Arg	Asn	Gly	Val	Val	Asp	Ala	Asp	Ile	Pro	Ala		
		85					90					95					
Leu	Leu	Gly	Thr	Lys	Ile	Leu	Leu	Lys	Tyr	Gly	Glu	Arg	Glu	Ser	Ser		
	100						105				110						
Tyr	Val	Phe	Leu	His	Val	Cys	Ile	Gln	Glu	Phe	Cys	Ala	Ala	Leu	Phe		
	115					120					125						
Tyr	Leu	Leu	Lys	Ser	His	Leu	Asp	His	Pro	His	Pro	Ala	Val	Arg	Cys		
	130				135				140								
Val	Gln	Glu	Leu	Leu	Val	Ala	Asn	Phe	Glu	Lys	Ala	Arg	Arg	Ala	His		
145				150					155					160			
Trp	Ile	Phe	Leu	Gly	Cys	Phe	Leu	Thr	Gly	Leu	Leu	Asn	Lys	Lys	Glu		
		165					170					175					
Gln	Glu	Lys	Leu	Asp	Ala	Phe	Phe	Gly	Phe	Gln	Leu	Ser	Gln	Glu	Ile		
	180						185				190						
Lys	Gln	Gln	Ile	His	Gln	Cys	Leu	Lys	Ser	Leu	Gly	Glu	Arg	Gly	Asn		
	195					200					205						

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Pro Gln Gly Gln Val Asp Ser Leu Ala Ile Phe Tyr Cys Leu Phe Glu
  210                      215                      220
Met Gln Asp Pro Ala Phe Val Lys Gln Ala Val Asn Leu Leu Gln Glu
  225                      230                      235                      240
Ala Asn Phe His Ile Ile Asp Asn Val Asp Leu Val Val Ser Ala Tyr
                      245                      250                      255
Cys Leu Lys Tyr Cys Ser Ser Leu Arg Lys Leu Cys Phe Ser
                      260                      265                      270

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<210> 39
 <211> 375
 <212> PRT
 <213> Homo sapiens

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<400> 39
Ser Asp Tyr Ser Leu Ile Cys Trp His His Ile Cys Ser Val Leu Thr
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Thr Ser Gly His Leu Arg Glu Leu Gln Val Gln Asp Ser Thr Leu Ser
                      20                      25                      30
Glu Ser Thr Phe Val Thr Trp Cys Asn Gln Leu Arg His Pro Ser Cys
                      35                      40                      45
Arg Leu Gln Lys Leu Gly Ile Asn Asn Val Ser Phe Ser Gly Gln Ser
                      50                      55                      60
Val Leu Leu Phe Glu Val Leu Phe Tyr Gln Pro Asp Leu Lys Tyr Leu
  65                      70                      75                      80
Ser Phe Thr Leu Thr Lys Leu Ser Arg Asp Asp Ile Arg Ser Leu Cys
                      85                      90                      95
Asp Ala Leu Asn Tyr Pro Ala Gly Asn Val Lys Glu Leu Ala Leu Val
                      100                      105                      110
Asn Cys His Leu Ser Pro Ile Asp Cys Glu Val Leu Ala Gly Leu Leu
                      115                      120                      125
Thr Asn Asn Lys Lys Leu Thr Tyr Leu Asn Val Ser Cys Asn Gln Leu
                      130                      135                      140
Asp Thr Gly Val Pro Leu Leu Cys Glu Ala Leu Cys Ser Pro Asp Thr
  145                      150                      155                      160
Val Leu Val Tyr Leu Met Leu Ala Phe Cys His Leu Ser Glu Gln Cys
                      165                      170                      175
Cys Glu Tyr Ile Ser Glu Met Leu Leu Arg Asn Lys Ser Val Arg Tyr
                      180                      185                      190
Leu Asp Leu Ser Ala Asn Val Leu Lys Asp Glu Gly Leu Lys Thr Leu
                      195                      200                      205
Cys Glu Ala Leu Lys His Pro Asp Cys Cys Leu Asp Ser Leu Cys Leu
                      210                      215                      220
Val Lys Cys Phe Ile Thr Ala Ala Gly Cys Glu Asp Leu Ala Ser Ala
  225                      230                      235                      240
Leu Ile Ser Asn Gln Asn Leu Lys Ile Leu Gln Ile Gly Cys Asn Glu
                      245                      250                      255
Ile Gly Asp Val Gly Val Gln Leu Leu Cys Arg Ala Leu Thr His Thr
                      260                      265                      270
Asp Cys Arg Leu Glu Ile Leu Gly Leu Glu Glu Cys Gly Leu Thr Ser
                      275                      280                      285
Thr Cys Cys Lys Asp Leu Ala Ser Val Leu Thr Cys Ser Lys Thr Leu

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290		295		300
Gln Gln Leu Asn Leu Thr Leu Asn Thr Leu Asp His Thr Gly Val Val				
305		310		315
Val Leu Cys Glu Ala Leu Arg His Pro Glu Cys Ala Leu Gln Val Leu				320
	325		330	335
Gly Leu Arg Lys Thr Asp Phe Asp Glu Glu Thr Gln Ala Leu Leu Thr				
	340		345	350
Ala Glu Glu Glu Arg Asn Pro Asn Leu Thr Ile Thr Asp Asp Cys Asp				
	355		360	365
Thr Ile Thr Arg Val Glu Ile				
370		375		

<210> 40
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 <212> DNA
 <213> Artificial Sequence

<220>
 <223> synthetic primer

<400> 40
 cctctcgagt cagatctcta cccttgatggt tgtgtcac 38

<210> 41
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> synthetic primer

<400> 41
 gaattcgatc ctggagccat gggg 24

<210> 42
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> synthetic primer

<400> 42
 ctcgagccgg agtggtgctg ggaa 24

<210> 43
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> synthetic primer

<400> 43
gaattcgatc ctggagccat gggg 24

<210> 44
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
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<400> 44
ctcgagtcag cttggctgcc gact 24

<210> 45
<211> 31
<212> DNA
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<400> 45
ccccctcgag ggcctggctt ggctgccgac t 31

<210> 46
<211> 24
<212> DNA
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<220>
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<400> 46
gaattccctc agtcggcagc caag 24

<210> 47
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic primer

<400> 47
ctcgagccgg agtggttgctg ggaa 24

<210> 48
<211> 22
<212> DNA
<213> Artificial Sequence

<220>

<223> synthetic primer

<400> 48

gaattcgagg cgcagggctg tg

22

<210> 49

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> synthetic primer

<400> 49

ctcgaggctt cacaggcgtt gcat

24

<210> 50

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> synthetic primer

<400> 50

ctcgaggcta cacaggcgtt gcat

24

<210> 51

<211> 30

<212> DNA

<213> Artificial Sequence

<220>

<223> synthetic primer

<400> 51

gaattcctct gggccttgag tgaccttgag

30

<210> 52

<211> 29

<212> DNA

<213> Artificial Sequence

<220>

<223> synthetic primer

<400> 52

ccagccgacc tcgagcagtc aaatatggc

29

<210> 53

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> synthetic primer

<400> 53

ttgctcgagt catctgaata c

21

<210> 54

<211> 25

<212> DNA

<213> Artificial Sequence

<220>

<223> synthetic primer

<400> 54

atggccatgg ccaaggccag aaagc

25

<210> 55

<211> 21

<212> DNA

<213> Artificial Sequence

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<400> 55

ttgctcgagt catctgaata c

21

<210> 56

<211> 31

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31

<210> 57

<211> 29

<212> DNA

<213> Artificial Sequence

<220>

<223> synthetic primer

<400> 57

atccctcacg aattcccctc actgtcctc

29

<210> 58

<211> 2524
<212> DNA
<213> Homo sapiens

<220>
<221> CDS
<222> (176)...(2332)

<221> misc_feature
<222> (306)...(458)
<223> n = A,T,C or G

<400> 58
ttaaagattt tgacttgta cagtcattgt acattttttt ctttctgtt gctgagtttt 60
tgataattta tatctctcaa agtggagact ttaaaaaaga ctcatccgtg tgccgtgttc 120
actgcctggt atcttagtgt ggaccgaagc ctaaggaccc tgaaaacagc tgcag atg 178
Met
1

aag atg gca agc acc cgc tgc aag ctg gcc agg tac ctg gag gac ctg 226
Lys Met Ala Ser Thr Arg Cys Lys Leu Ala Arg Tyr Leu Glu Asp Leu
5 10 15

gag gat gtg gac ttg aag aaa ttt aag atg cac tta gag gac tat cct 274
Glu Asp Val Asp Leu Lys Lys Phe Lys Met His Leu Glu Asp Tyr Pro
20 25 30

ccc cag aag ggc tgc atc ccc ctc ccg agg gnn nnn nnn nnn nnn 322
Pro Gln Lys Gly Cys Ile Pro Leu Pro Arg Xaa Xaa Xaa Xaa Xaa Xaa
35 40 45

nnn nnn nnn nnn nnn nnn nnn nnn nnn nnn nnn nnn nnn nnn nnn 370
Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
50 55 60 65

nnn nnn nnn nnn nnn nnn nnn nnn nnn nnn nnn nnn nnn nnn nnn 418
Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
70 75 80

nnn nnn nnn nnn nnn nnn nnn nnn nnn nnn nnn nnn nnn ngt tca gat 466
Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Ser Asp
85 90 95

aat gca cgt gtt tcg aat ccc act gtg ata tgc cag gaa gac agc att 514
Asn Ala Arg Val Ser Asn Pro Thr Val Ile Cys Gln Glu Asp Ser Ile
100 105 110

gaa gag gag tgg atg ggt tta ctg gag tac ctt tcg aga atc tct att 562
Glu Glu Glu Trp Met Gly Leu Leu Glu Tyr Leu Ser Arg Ile Ser Ile
115 120 125

tgt aaa atg aag aaa gat tac cgt aag aag tac aga aag tac gtg aga 610
Cys Lys Met Lys Lys Asp Tyr Arg Lys Lys Tyr Arg Lys Tyr Val Arg

130	135	140	145	
agc aga ttc cag tgc att gaa gac agg aat gcc cgt ctg ggt gag agt				658
Ser Arg Phe Gln Cys Ile Glu Asp Arg Asn Ala Arg Leu Gly Glu Ser				
	150	155	160	
gtg agc ctc aac aaa cgc tac aca cga ctg cgt ctc atc aag gag cac				706
Val Ser Leu Asn Lys Arg Tyr Thr Arg Leu Arg Leu Ile Lys Glu His				
	165	170	175	
cgg agc cag cag gag agg gag cag gag ctt ctg gcc atc ggc aag acc				754
Arg Ser Gln Gln Glu Arg Glu Gln Glu Leu Leu Ala Ile Gly Lys Thr				
	180	185	190	
aag acg tgt gag agc ccc gtg agt ccc att aag atg gag ttg ctg ttt				802
Lys Thr Cys Glu Ser Pro Val Ser Pro Ile Lys Met Glu Leu Leu Phe				
	195	200	205	
gac ccc gat gat gag cat tct gag cct gtg cac acc gtg gtg ttc cag				850
Asp Pro Asp Asp Glu His Ser Glu Pro Val His Thr Val Val Phe Gln				
	210	215	220	225
ggg gcg gca ggg att ggg aaa aca atc ctg gcc agg aag atg atg ttg				898
Gly Ala Ala Gly Ile Gly Lys Thr Ile Leu Ala Arg Lys Met Met Leu				
	230	235	240	
gac tgg gcg tcg ggg aca ctc tac caa gac agg ttt gac tat ctg ttc				946
Asp Trp Ala Ser Gly Thr Leu Tyr Gln Asp Arg Phe Asp Tyr Leu Phe				
	245	250	255	
tat atc cac tgt cga gag gtg agc ctt gtg aca cag agg agc ctg ggg				994
Tyr Ile His Cys Arg Glu Val Ser Leu Val Thr Gln Arg Ser Leu Gly				
	260	265	270	
gac ctg atc atg agc tgc tgc ccc gac cca aac cca ccc atc cac aag				1042
Asp Leu Ile Met Ser Cys Cys Pro Asp Pro Asn Pro Pro Ile His Lys				
	275	280	285	
atc gtg aga aaa ccc tcc aga atc ctc ttc ctc atg gac ggc ttc gat				1090
Ile Val Arg Lys Pro Ser Arg Ile Leu Phe Leu Met Asp Gly Phe Asp				
	290	295	300	305
gag ctg caa ggt gcc ttt gac gag cac ata gga ccg ctc tgc act gac				1138
Glu Leu Gln Gly Ala Phe Asp Glu His Ile Gly Pro Leu Cys Thr Asp				
	310	315	320	
tgg cag aag gcc gag cgg gga gac att ctc ctg agc agc ctc atc aga				1186
Trp Gln Lys Ala Glu Arg Gly Asp Ile Leu Leu Ser Ser Leu Ile Arg				
	325	330	335	
aag aag ctg ctt ccc gag gcc tct ctg ctc atc acc acg aga cct gtg				1234
Lys Lys Leu Leu Pro Glu Ala Ser Leu Leu Ile Thr Thr Arg Pro Val				
	340	345	350	

gcc ctg gag aaa ctg cag cac ttg ctg gac cat cct cgg cat gtg gag	1282
Ala Leu Glu Lys Leu Gln His Leu Leu Asp His Pro Arg His Val Glu	
355 360 365	
atc ctg ggt ttc tcc gag gcc aaa agg aaa gag tac ttc ttc aag tac	1330
Ile Leu Gly Phe Ser Glu Ala Lys Arg Lys Glu Tyr Phe Phe Lys Tyr	
370 375 380 385	
ttc tct gat gag gcc caa gcc agg gca gcc ttc agt ctg att cag gag	1378
Phe Ser Asp Glu Ala Gln Ala Arg Ala Ala Phe Ser Leu Ile Gln Glu	
390 395 400	
aac gag gtc ctc ttc acc atg tgc ttc atc ccc ctg gtc tgc tgg atc	1426
Asn Glu Val Leu Phe Thr Met Cys Phe Ile Pro Leu Val Cys Trp Ile	
405 410 415	
gtg tgc act gga ctg aaa cag cag atg gag agt ggc aag agc ctt gcc	1474
Val Cys Thr Gly Leu Lys Gln Gln Met Glu Ser Gly Lys Ser Leu Ala	
420 425 430	
cag aca tcc aag acc acc acc gcg gtg tac gtc ttc ttc ctt tcc agt	1522
Gln Thr Ser Lys Thr Thr Thr Ala Val Tyr Val Phe Phe Leu Ser Ser	
435 440 445	
ttg ctg cag ccc cgg gga ggg agc cag gag cac ggc ctc tgc gcc cac	1570
Leu Leu Gln Pro Arg Gly Gly Ser Gln Glu His Gly Leu Cys Ala His	
450 455 460 465	
ctc tgg ggg ctc tgc tct ttg gct gca gat gga atc tgg aac cag aaa	1618
Leu Trp Gly Leu Cys Ser Leu Ala Ala Asp Gly Ile Trp Asn Gln Lys	
470 475 480	
atc ctg ttt gag gag tcc gac ctc agg aat cat gga ctg cag aag gcg	1666
Ile Leu Phe Glu Glu Ser Asp Leu Arg Asn His Gly Leu Gln Lys Ala	
485 490 495	
gat gtg tct gct ttc ctg agg atg aac ctg ttc caa aag gaa gtg gac	1714
Asp Val Ser Ala Phe Leu Arg Met Asn Leu Phe Gln Lys Glu Val Asp	
500 505 510	
tgc gag aag ttc tac agc ttc atc cac atg act ttc cag gag ttc ttt	1762
Cys Glu Lys Phe Tyr Ser Phe Ile His Met Thr Phe Gln Glu Phe Phe	
515 520 525	
gcc gcc atg tac tac ctg ctg gaa gag gaa aag gaa gga agg acg aac	1810
Ala Ala Met Tyr Tyr Leu Leu Glu Glu Glu Lys Glu Gly Arg Thr Asn	
530 535 540 545	
gtt cca ggg agt cgt ttg aag ctt ccc agc cga gac gtg aca gtc ctt	1858
Val Pro Gly Ser Arg Leu Lys Leu Pro Ser Arg Asp Val Thr Val Leu	
550 555 560	

ctg gaa aac tat ggc aaa ttc gaa aag ggg tat ttg att ttt gtt gta 1906
Leu Glu Asn Tyr Gly Lys Phe Glu Lys Gly Tyr Leu Ile Phe Val Val
565 570 575

cgt ttc ctc ttt ggc ctg gta aac cag gag agg acc tcc tac ttg gag 1954
Arg Phe Leu Phe Gly Leu Val Asn Gln Glu Arg Thr Ser Tyr Leu Glu
580 585 590

aag aaa tta agt tgc aag atc tct cag caa atc agg ctg gag ctg ctg 2002
Lys Lys Leu Ser Cys Lys Ile Ser Gln Gln Ile Arg Leu Glu Leu Leu
595 600 605

aaa tgg att gaa gtg aaa gcc aaa gct aaa aag ctg cag atc cag ccc 2050
Lys Trp Ile Glu Val Lys Ala Lys Ala Lys Lys Leu Gln Ile Gln Pro
610 615 620 625

agc cag ctg gaa ttg ttc tac tgt ttg tac gag atg cag gag gag gac 2098
Ser Gln Leu Glu Leu Phe Tyr Cys Leu Tyr Glu Met Gln Glu Glu Asp
630 635 640

ttc gtg caa agg gcc atg gac tat ttc ccc aag att gag atc aat ctc 2146
Phe Val Gln Arg Ala Met Asp Tyr Phe Pro Lys Ile Glu Ile Asn Leu
645 650 655

tcc acc aga atg gac cac atg gtt tct tcc ttt tgc att gag aac tgt 2194
Ser Thr Arg Met Asp His Met Val Ser Ser Phe Cys Ile Glu Asn Cys
660 665 670

cat cgg gtg gag tca ctg tcc ctg ggg ttt ctc cat aac atg ccc aag 2242
His Arg Val Glu Ser Leu Ser Leu Gly Phe Leu His Asn Met Pro Lys
675 680 685

gag gaa gag gag gag gaa aag gaa ggc cga cac ctt gat atg gtg cag 2290
Glu Glu Glu Glu Glu Glu Lys Glu Gly Arg His Leu Asp Met Val Gln
690 695 700 705

tgt gtc ctc cca agc tcc tct cat gct gcc tgt tct cat ggg 2332
Cys Val Leu Pro Ser Ser Ser His Ala Ala Cys Ser His Gly
710 715

taaggaaaact cggcttccag gtgcttccctc ctgcttccctc gccagcttct tcttggcgct 2392
tgcttccctct catctctttt caactatctt ccaaatactg ttgccacagc tacatcataa 2452
tgccaccact gtctgtttga gactccttca tgagcaaaga ttgatgtatg gtaggtggat 2512
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<210> 59
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<212> PRT
<213> Homo sapiens

<220>
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59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71

<223> Xaa = Any Amino Acid

<221> VARIANT

<222> 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86,
87, 88, 89, 90, 91, 92, 93, 94, 95

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<400> 59

Met	Lys	Met	Ala	Ser	Thr	Arg	Cys	Lys	Leu	Ala	Arg	Tyr	Leu	Glu	Asp	
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Leu	Glu	Asp	Val	Asp	Leu	Lys	Lys	Phe	Lys	Met	His	Leu	Glu	Asp	Tyr	
			20					25					30			
Pro	Pro	Gln	Lys	Gly	Cys	Ile	Pro	Leu	Pro	Arg	Xaa	Xaa	Xaa	Xaa	Xaa	
		35					40					45				
Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa
		50				55					60					
Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa
65					70				75						80	
Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Ser
				85				90						95		
Asp	Asn	Ala	Arg	Val	Ser	Asn	Pro	Thr	Val	Ile	Cys	Gln	Glu	Asp	Ser	
		100						105					110			
Ile	Glu	Glu	Glu	Trp	Met	Gly	Leu	Leu	Glu	Tyr	Leu	Ser	Arg	Ile	Ser	
		115					120					125				
Ile	Cys	Lys	Met	Lys	Lys	Asp	Tyr	Arg	Lys	Lys	Tyr	Arg	Lys	Tyr	Val	
	130					135					140					
Arg	Ser	Arg	Phe	Gln	Cys	Ile	Glu	Asp	Arg	Asn	Ala	Arg	Leu	Gly	Glu	
145					150					155					160	
Ser	Val	Ser	Leu	Asn	Lys	Arg	Tyr	Thr	Arg	Leu	Arg	Leu	Ile	Lys	Glu	
			165					170						175		
His	Arg	Ser	Gln	Gln	Glu	Arg	Glu	Gln	Glu	Leu	Leu	Ala	Ile	Gly	Lys	
		180					185						190			
Thr	Lys	Thr	Cys	Glu	Ser	Pro	Val	Ser	Pro	Ile	Lys	Met	Glu	Leu	Leu	
		195				200						205				
Phe	Asp	Pro	Asp	Asp	Glu	His	Ser	Glu	Pro	Val	His	Thr	Val	Val	Phe	
	210					215					220					
Gln	Gly	Ala	Ala	Gly	Ile	Gly	Lys	Thr	Ile	Leu	Ala	Arg	Lys	Met	Met	
225					230					235					240	
Leu	Asp	Trp	Ala	Ser	Gly	Thr	Leu	Tyr	Gln	Asp	Arg	Phe	Asp	Tyr	Leu	
			245					250						255		
Phe	Tyr	Ile	His	Cys	Arg	Glu	Val	Ser	Leu	Val	Thr	Gln	Arg	Ser	Leu	
		260					265					270				
Gly	Asp	Leu	Ile	Met	Ser	Cys	Cys	Pro	Asp	Pro	Asn	Pro	Pro	Ile	His	
	275					280					285					
Lys	Ile	Val	Arg	Lys	Pro	Ser	Arg	Ile	Leu	Phe	Leu	Met	Asp	Gly	Phe	
	290				295						300					
Asp	Glu	Leu	Gln	Gly	Ala	Phe	Asp	Glu	His	Ile	Gly	Pro	Leu	Cys	Thr	
305					310					315					320	
Asp	Trp	Gln	Lys	Ala	Glu	Arg	Gly	Asp	Ile	Leu	Leu	Ser	Ser	Leu	Ile	
			325					330						335		
Arg	Lys	Lys	Leu	Leu	Pro	Glu	Ala	Ser	Leu	Leu	Ile	Thr	Thr	Arg	Pro	
		340						345						350		

Val	Ala	Leu	Glu	Lys	Leu	Gln	His	Leu	Leu	Asp	His	Pro	Arg	His	Val
		355					360					365			
Glu	Ile	Leu	Gly	Phe	Ser	Glu	Ala	Lys	Arg	Lys	Glu	Tyr	Phe	Phe	Lys
		370				375					380				
Tyr	Phe	Ser	Asp	Glu	Ala	Gln	Ala	Arg	Ala	Ala	Phe	Ser	Leu	Ile	Gln
385					390					395					400
Glu	Asn	Glu	Val	Leu	Phe	Thr	Met	Cys	Phe	Ile	Pro	Leu	Val	Cys	Trp
				405					410					415	
Ile	Val	Cys	Thr	Gly	Leu	Lys	Gln	Gln	Met	Glu	Ser	Gly	Lys	Ser	Leu
			420					425					430		
Ala	Gln	Thr	Ser	Lys	Thr	Thr	Thr	Ala	Val	Tyr	Val	Phe	Phe	Leu	Ser
		435					440					445			
Ser	Leu	Leu	Gln	Pro	Arg	Gly	Gly	Ser	Gln	Glu	His	Gly	Leu	Cys	Ala
		450				455					460				
His	Leu	Trp	Gly	Leu	Cys	Ser	Leu	Ala	Ala	Asp	Gly	Ile	Trp	Asn	Gln
465					470					475					480
Lys	Ile	Leu	Phe	Glu	Glu	Ser	Asp	Leu	Arg	Asn	His	Gly	Leu	Gln	Lys
				485					490					495	
Ala	Asp	Val	Ser	Ala	Phe	Leu	Arg	Met	Asn	Leu	Phe	Gln	Lys	Glu	Val
		500						505					510		
Asp	Cys	Glu	Lys	Phe	Tyr	Ser	Phe	Ile	His	Met	Thr	Phe	Gln	Glu	Phe
		515					520					525			
Phe	Ala	Ala	Met	Tyr	Tyr	Leu	Leu	Glu	Glu	Glu	Lys	Glu	Gly	Arg	Thr
		530				535					540				
Asn	Val	Pro	Gly	Ser	Arg	Glu	Lys	Leu	Pro	Ser	Arg	Asp	Val	Thr	Val
545					550					555					560
Leu	Leu	Glu	Asn	Tyr	Gly	Lys	Phe	Glu	Lys	Gly	Tyr	Leu	Ile	Phe	Val
				565					570					575	
Val	Arg	Phe	Leu	Phe	Gly	Leu	Val	Asn	Gln	Glu	Arg	Thr	Ser	Tyr	Leu
			580					585					590		
Glu	Lys	Lys	Leu	Ser	Cys	Lys	Ile	Ser	Gln	Gln	Ile	Arg	Leu	Glu	Leu
		595					600					605			
Leu	Lys	Trp	Ile	Glu	Val	Lys	Ala	Lys	Ala	Lys	Lys	Leu	Gln	Ile	Gln
		610				615					620				
Pro	Ser	Gln	Leu	Glu	Leu	Phe	Tyr	Cys	Leu	Tyr	Glu	Met	Gln	Glu	Glu
625					630					635					640
Asp	Phe	Val	Gln	Arg	Ala	Met	Asp	Tyr	Phe	Pro	Lys	Ile	Glu	Ile	Asn
				645					650					655	
Leu	Ser	Thr	Arg	Met	Asp	His	Met	Val	Ser	Ser	Phe	Cys	Ile	Glu	Asn
			660					665				670			
Cys	His	Arg	Val	Glu	Ser	Leu	Ser	Leu	Gly	Phe	Leu	His	Asn	Met	Pro
		675					680					685			
Lys	Glu	Glu	Glu	Glu	Glu	Glu	Lys	Glu	Gly	Arg	His	Leu	Asp	Met	Val
		690				695					700				
Gln	Cys	Val	Leu	Pro</											

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<210> 60
<211> 317
<212> PRT
<213> Homo sapiens
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<400> 60

Leu	Thr	Val	Val	Leu	Gln	Gly	Pro	Ala	Gly	Ile	Gly	Lys	Thr	Met	Ala	
1				5					10					15		
Ala	Lys	Lys	Ile	Leu	Tyr	Asp	Trp	Ala	Ala	Gly	Lys	Leu	Tyr	Gln	Gly	
			20					25					30			
Gln	Val	Asp	Phe	Ala	Phe	Phe	Met	Pro	Cys	Gly	Glu	Leu	Leu	Glu	Arg	
		35					40					45				
Pro	Gly	Thr	Arg	Ser	Leu	Ala	Asp	Leu	Ile	Leu	Asp	Gln	Cys	Pro	Asp	
	50					55					60					
Arg	Gly	Ala	Pro	Val	Pro	Gln	Met	Leu	Ala	Gln	Pro	Gln	Arg	Leu	Leu	
65					70					75					80	
Phe	Ile	Leu	Asp	Gly	Ala	Asp	Glu	Leu	Pro	Ala	Leu	Gly	Gly	Pro	Glu	
				85					90					95		
Ala	Ala	Pro	Cys	Thr	Asp	Pro	Phe	Glu	Ala	Ala	Ser	Gly	Ala	Arg	Val	
			100					105					110			
Leu	Gly	Gly	Leu	Leu	Ser	Lys	Ala	Leu	Leu	Pro	Thr	Ala	Leu	Leu	Leu	
		115					120					125				
Val	Thr	Thr	Arg	Ala	Ala	Ala	Pro	Gly	Arg	Leu	Gln	Gly	Arg	Leu	Cys	
	130					135					140					
Ser	Pro	Gln	Cys	Ala	Glu	Val	Arg	Gly	Phe	Ser	Asp	Lys	Asp	Lys	Lys	
145					150					155					160	
Lys	Tyr	Phe	Tyr	Lys	Phe	Phe	Arg	Asp	Glu	Arg	Arg	Ala	Glu	Arg	Ala	
				165					170					175		
Tyr	Arg	Phe	Val	Lys	Glu	Asn	Glu	Thr	Leu	Phe	Ala	Leu	Cys	Phe	Val	
			180					185					190			
Pro	Phe	Val	Cys	Trp	Ile	Val	Cys	Thr	Val	Leu	Arg	Gln	Gln	Leu	Glu	
		195					200					205				
Leu	Gly	Arg	Asp	Leu	Ser	Arg	Thr	Ser	Lys	Thr	Thr	Thr	Ser	Val	Tyr	
	210					215					220					
Leu	Leu	Phe	Ile	Thr	Ser	Val	Leu	Ser	Ser	Ala	Pro	Val	Ala	Asp	Gly	
225					230					235					240	
Pro	Arg	Leu	Gln	Gly	Asp	Leu	Arg	Asn	Leu	Cys	Arg	Leu	Ala	Arg	Glu	
				245					250					255		
Gly	Val	Leu	Gly	Arg	Arg	Ala	Gln	Phe	Ala	Glu	Lys	Glu	Leu	Glu	Gln	
			260					265					270			
Leu	Glu	Leu	Arg	Gly	Ser	Lys	Val	Gln	Thr	Leu	Phe	Leu	Ser	Lys	Lys	
		275					280					285				
Glu	Leu	Pro	Gly	Val	Leu	Glu	Thr	Glu	Val	Thr	Tyr	Gln	Phe	Ile	Asp	
	290					295					300					
Gln	Ser	Phe	Gln	Glu	Phe	Leu	Ala	Ala	Leu	Ser	Tyr	Leu				
305					310					315						

<210> 61

<211> 290

<212> PRT

<213> Homo sapiens

<400> 61

Val	Leu	Ser	Tyr	Cys	Val	Arg	Cys	Cys	Pro	Ala	Gly	Gln	Ala	Leu	Arg	
1				5					10					15		
Leu	Ile	Ser	Cys	Arg	Leu	Val	Ala	Ala	Gln	Glu	Lys	Lys	Lys	Lys	Ser	
			20					25					30			

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Leu Gly Lys Arg Leu Gln Ala Ser Leu Gly Gly Gly Ser Trp Leu Gly
   35         40         45
Thr Gln Leu Ala Pro Glu Val Pro Phe Arg Pro Pro Cys Cys Asp Ile
   50         55         60
Cys Pro Thr Pro Pro Pro Asp Pro Arg Leu Leu Gln Gly Lys Ala Phe
   65         70         75         80
Ala Arg Val Pro Leu Asn Ile Ala Pro Ile Gln Pro Leu Pro Arg Gly
           85         90         95
Leu Ala Ser Val Glu Arg Met Asn Val Thr Val Leu Ala Gly Ala Gly
           100        105        110
Pro Gly Asp Pro Lys Thr His Ala Met Thr Asp Pro Leu Cys His Leu
           115        120        125
Ser Ser Leu Thr Leu Ser His Cys Lys Leu Pro Asp Ala Val Cys Arg
           130        135        140
Asp Leu Ser Glu Ala Leu Arg Ala Ala Pro Ala Leu Thr Glu Leu Gly
           145        150        155        160
Leu Leu His Asn Arg Leu Ser Glu Ala Gly Leu Arg Met Leu Ser Glu
           165        170        175
Gly Leu Ala Trp Pro Gln Cys Arg Val Gln Thr Val Arg Val Gln Leu
           180        185        190
Pro Asp Pro Gln Arg Gly Leu Gln Tyr Leu Val Gly Met Leu Arg Gln
           195        200        205
Ser Pro Ala Leu Thr Thr Leu Asp Leu Ser Gly Cys Gln Leu Pro Ala
           210        215        220
Pro Met Val Thr Tyr Leu Cys Ala Val Leu Gln His Gln Gly Cys Gly
           225        230        235        240
Leu Gln Thr Leu Ser Leu Ala Ser Val Glu Leu Ser Glu Gln Ser Leu
           245        250        255
Gln Glu Leu Gln Ala Val Lys Arg Ala Lys Pro Asp Leu Val Ile Thr
           260        265        270
His Pro Ala Leu Asp Gly His Pro Gln Pro Pro Lys Glu Leu Ile Ser
           275        280        285
Thr Phe
           290

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<210> 62
 <211> 181
 <212> PRT
 <213> Homo sapiens

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<400> 62
Ile Cys Leu His Gly Val Gly Trp His Trp Lys Asp Asn Ser Arg Gln
  1         5         10        15
Lys Lys Val Leu Asp Trp Ala Thr Gly Thr Leu Tyr Pro Gly Arg Phe
           20        25        30
Asp Tyr Val Phe Tyr Val Ser Cys Lys Glu Val Val Leu Leu Leu Glu
           35        40        45
Ser Lys Leu Glu Gln Leu Leu Phe Trp Cys Cys Gly Asp Asn Gln Ala
           50        55        60
Pro Val Thr Glu Ile Leu Arg Gln Pro Glu Arg Leu Leu Phe Ile Leu
           65        70        75        80
Asp Gly Phe Asp Glu Leu Gln Arg Pro Phe Glu Glu Lys Leu Lys Lys

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				85					90					95			
Arg	Gly	Leu	Ser	Pro	Lys	Glu	Ser	Leu	Leu	His	Leu	Leu	Ile	Arg	Arg		
			100					105					110				
His	Thr	Leu	Pro	Thr	Cys	Ser	Leu	Leu	Ile	Thr	Thr	Arg	Pro	Leu	Ala		
		115					120					125					
Leu	Arg	Asn	Leu	Glu	Pro	Leu	Leu	Lys	Gln	Ala	Arg	His	Val	His	Ile		
		130				135					140						
Leu	Gly	Phe	Ser	Glu	Glu	Glu	Arg	Ala	Arg	Tyr	Phe	Ser	Ser	Tyr	Phe		
145					150				155						160		
Thr	Asp	Glu	Lys	Gln	Ala	Asp	Arg	Ala	Phe	Asp	Ile	Val	Gln	Lys	Asn		
			165					170						175			
Asp	Ile	Leu	Tyr	Lys													
		180															

<210> 63
 <211> 190
 <212> PRT
 <213> Homo sapiens

Pro	Arg	Thr	Val	Val	Met	Gln	Gly	Ala	Ala	Gly	Ile	Gly	Lys	Ser	Met		
1				5				10					15				
Leu	Ala	His	Lys	Val	Met	Leu	Asp	Trp	Ala	Asp	Gly	Lys	Leu	Phe	Gln		
		20					25					30					
Gly	Arg	Phe	Asp	Tyr	Leu	Phe	Tyr	Ile	Asn	Cys	Arg	Glu	Met	Asn	Gln		
		35				40					45						
Ser	Ala	Thr	Glu	Cys	Ser	Met	Gln	Asp	Leu	Ile	Phe	Ser	Cys	Trp	Pro		
	50				55					60							
Glu	Pro	Ser	Ala	Pro	Leu	Gln	Glu	Leu	Ile	Arg	Val	Pro	Glu	Arg	Leu		
65				70				75						80			
Leu	Phe	Ile	Ile	Asp	Gly	Phe	Asp	Glu	Leu	Lys	Pro	Ser	Phe	His	Asp		
			85					90					95				
Pro	Gln	Gly	Pro	Trp	Cys	Leu	Cys	Trp	Glu	Glu	Lys	Arg	Pro	Thr	Glu		
		100				105						110					
Leu	Leu	Leu	Asn	Ser	Leu	Ile	Arg	Lys	Lys	Leu	Leu	Pro	Glu	Leu	Ser		
		115				120						125					
Leu	Leu	Ile	Thr	Thr	Arg	Pro	Thr	Ala	Leu	Glu	Lys	Leu	His	Arg	Leu		
		130			135					140							
Leu	Glu	His	Pro	Arg	His	Val	Glu	Ile	Leu	Gly	Phe	Ser	Glu	Ala	Glu		
145				150				155							160		
Arg	Lys	Glu	Tyr	Phe	Tyr	Lys	Tyr	Phe	His	Asn	Ala	Glu	Gln	Ala	Gly		
			165					170						175			
Gln	Val	Phe	Asn	Tyr	Val	Arg	Asp	Asn	Glu	Pro	Leu	Phe	Thr				
		180						185					190				

<210> 64
 <211> 603
 <212> PRT
 <213> Homo sapiens

<400> 64

Pro	Asn	Gln	Arg	Gly	Leu	Cys	Ser	Leu	Ala	Asp	Gly	Leu	Trp	Asn	
1				5				10				15			
Gln	Lys	Ile	Leu	Phe	Glu	Glu	Gln	Asp	Leu	Arg	Lys	His	Gly	Leu	Asp
			20					25				30			
Gly	Glu	Asp	Val	Ser	Ala	Phe	Leu	Asn	Met	Asn	Ile	Phe	Gln	Lys	Asp
		35					40				45				
Ile	Asn	Cys	Glu	Arg	Tyr	Tyr	Ser	Phe	Ile	His	Leu	Ser	Phe	Gln	Glu
	50					55				60					
Phe	Phe	Ala	Ala	Met	Tyr	Tyr	Ile	Leu	Asp	Glu	Gly	Glu	Gly	Gly	Ala
65				70					75						80
Gly	Pro	Asp	Gln	Asp	Val	Thr	Arg	Leu	Leu	Thr	Glu	Tyr	Ala	Phe	Ser
			85					90					95		
Glu	Arg	Ser	Phe	Leu	Ala	Leu	Thr	Ser	Arg	Phe	Leu	Phe	Gly	Leu	Leu
			100					105					110		
Asn	Glu	Glu	Thr	Arg	Ser	His	Leu	Glu	Lys	Ser	Leu	Cys	Trp	Lys	Val
		115					120					125			
Ser	Pro	His	Ile	Lys	Met	Asp	Leu	Leu	Gln	Trp	Ile	Gln	Ser	Lys	Ala
	130					135					140				
Gln	Ser	Asp	Gly	Ser	Thr	Leu	Gln	Gln	Gly	Ser	Leu	Glu	Phe	Phe	Ser
145					150				155						160
Cys	Leu	Tyr	Glu	Ile	Gln	Glu	Glu	Glu	Phe	Ile	Gln	Gln	Ala	Leu	Ser
			165					170					175		
His	Phe	Gln	Val	Ile	Val	Val	Ser	Asn	Ile	Ala	Ser	Lys	Met	Glu	His
			180					185					190		
Met	Val	Ser	Ser	Phe	Cys	Leu	Lys	Arg	Cys	Arg	Ser	Ala	Gln	Val	Leu
		195					200					205			
His	Leu	Tyr	Gly	Ala	Thr	Tyr	Ser	Ala	Asp	Gly	Glu	Asp	Arg	Ala	Arg
	210					215				220					
Cys	Ser	Ala	Gly	Ala	His	Thr	Leu	Leu	Val	Gln	Leu	Arg	Pro	Glu	Arg
225					230				235						240
Thr	Val	Leu	Leu	Asp	Ala	Tyr	Ser	Glu	His	Leu	Ala	Ala	Ala	Leu	Cys
			245					250					255		
Thr	Asn	Pro	Asn	Leu	Ile	Glu	Leu	Ser	Leu	Tyr	Arg	Asn	Ala	Leu	Gly
		260					265					270			
Ser	Arg	Gly	Val	Lys	Leu	Leu	Cys	Gln	Gly	Leu	Arg	His	Pro	Asn	Cys
	275						280					285			
Lys	Leu	Gln	Asn	Leu	Arg	Leu	Lys	Arg	Cys	Arg	Ile	Ser	Ser	Ser	Ala
	290					295				300					
Cys	Glu	Asp	Leu	Ser	Ala	Ala	Leu	Ile	Ala	Asn	Lys	Asn	Leu	Thr	Arg
305					310				315						320
Met	Asp	Leu	Ser	Gly	Asn	Gly	Val	Gly	Phe	Pro	Gly	Met	Met	Leu	Leu
			325					330						335	
Cys	Glu	Gly	Leu	Arg	His	Pro	Gln	Cys	Arg	Leu	Gln	Met	Ile	Gln	Leu
		340					345						350		
Arg	Lys	Cys	Gln	Leu	G										

420										425					430				
Arg	Glu	Leu	Asp	Leu	Ser	Leu	Asn	Glu	Leu	Gly	Asp	Leu	Gly	Val	Leu				
435							440					445							
Leu	Leu	Cys	Glu	Gly	Leu	Arg	His	Pro	Thr	Cys	Lys	Leu	Gln	Thr	Leu				
450							455					460							
Arg	Leu	Gly	Ile	Cys	Arg	Leu	Gly	Ser	Ala	Ala	Cys	Glu	Gly	Leu	Ser				
465	470							475					480						
Val	Val	Leu	Gln	Ala	Asn	His	Asn	Leu	Arg	Glu	Leu	Asp	Leu	Ser	Phe				
485							490					495							
Asn	Asp	Leu	Gly	Asp	Trp	Gly	Leu	Trp	Leu	Leu	Ala	Glu	Gly	Leu	Gln				
500							505					510							
His	Pro	Ala	Cys	Arg	Leu	Gln	Lys	Leu	Trp	Leu	Asp	Ser	Cys	Gly	Leu				
515							520					525							
Thr	Ala	Lys	Ala	Cys	Glu	Asn	Leu	Tyr	Phe	Thr	Leu	Gly	Ile	Asn	Gln				
530							535					540							
Thr	Leu	Thr	Asp	Leu	Tyr	Leu	Thr	Asn	Asn	Ala	Leu	Gly	Asp	Thr	Gly				
545	550							555					560						
Val	Arg	Leu	Leu	Cys	Lys	Arg	Leu	Ser	His	Pro	Gly	Cys	Lys	Leu	Arg				
565							570					575							
Val	Leu	Trp	Leu	Phe	Gly	Met	Asp	Leu	Asn	Lys	Met	Thr	His	Ser	Arg				
580							585					590							
Leu	Ala	Ala	Leu	Arg	Val	Thr	Lys	Pro	Tyr	Leu									
595							600												